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# BIOLOGICAL BULLETIN

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## ELEVENTH REPORT OF THE MARINE BIOLOGICAL LABORATORY OF WOODS HOLE, MASS., FOR THE YEARS 1907-1908.

### INDEX.

	PAGE.
I. TRUSTEES .....	1
II. ACT OF INCORPORATION.....	5
III. BY-LAWS OF THE CORPORATION.....	6
IV. REPORT OF THE TRUSTEES.....	8
V. REPORT OF THE TREASURER.....	14
VI. THE DIRECTOR'S REPORT.	
1. Introduction .....	18
2. The Staff .....	24
3. Subscribing Institutions .....	29
4. Investigators and Students.....	31
5. Tabular View of Attendance.....	40
6. Research Seminar and Evening Lectures.....	42
7. Meeting of the Seventh International Zoölogical Congress at Woods Hole.....	45
8. Members of the Corporation.....	49
9. Publications from the Marine Biological Laboratory.....	56

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### I. TRUSTEES

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AUGUST, 1907

#### EX OFFICIO

C. O. WHITMAN, *Director*, University of Chicago.

F. R. LILLIE, *Assistant Director*, University of Chicago.

E. G. GARDINER, *Clerk of the Corporation*, 131 Mt. Vernon Street,  
Boston, Mass.

## TO SERVE UNTIL 1911

- H. C. BUMPUS ..... American Museum of Natural History,  
New York City.
- D. BLAKELY HOAR ..... *Treasurer*, 161 Devonshire Street, Boston,  
Mass.
- W. A. LOCY ..... Northwestern University, Evanston, Ill.
- JACQUES LOEB ..... University of California, Berkeley, Cal.
- F. P. MALL ..... Johns Hopkins University, Baltimore, Md.
- GILMAN A. DREW ..... University of Maine, Orono, Me.
- GEORGE T. MOORE ..... Water Mill, N. Y.

## TO SERVE UNTIL 1910

- E. G. CONKLIN ..... University of Pennsylvania, Philadelphia,  
Pa.
- CAMILLUS G. KIDDER .... 27 William Street, New York City.
- M. M. METCALF ..... Oberlin College, Oberlin, O.
- WILLIAM PATTEN ..... Dartmouth College, Hanover, N. H.
- D. P. PENHALLOW ..... McGill University, Montreal, Canada.
- JACOB REIGHARD ..... University of Michigan, Ann Arbor, Mich.
- W. B. SCOTT ..... Princeton University, Princeton, N. J.

## TO SERVE UNTIL 1909

- S. F. CLARK ..... Williams College, Williamstown, Mass.
- CHARLES COOLIDGE ..... Ames Building, Boston, Mass.
- C. R. CRANE ..... 2559 Michigan Boulevard, Chicago, Ill.,  
*President of the Board.*
- T. H. MORGAN ..... Columbia University, New York City.
- L. L. NUNN ..... Telluride, Colo.
- JOHN C. PHILLIPS ..... 299 Berkeley Street, Boston, Mass.
- ERWIN F. SMITH ..... United States Department of Agriculture,  
Washington, D. C.
- E. B. WILSON ..... Columbia University, New York City.

## TO SERVE UNTIL 1908

- W. K. BROOKS ..... Johns Hopkins University, Baltimore, Md.
- C. W. HARGITT ..... Syracuse University, Syracuse, N. Y.
- C. A. HERTER ..... Bellevue University Medical School, New  
York City.
- H. S. JENNINGS ..... Johns Hopkins University, Baltimore, Md.
- WILLIAM LIBBEY ..... Princeton University, Princeton, N. J.

- A. P. MATHEWS ..... University of Chicago, Chicago, Ill.  
 W. P. WILSON ..... Philadelphia Commercial Museum, Philadelphia, Pa.

## EXECUTIVE COMMITTEE

- |                |                 |                 |
|----------------|-----------------|-----------------|
| C. R. CRANE,   | F. R. LILLIE,   | E. B. WILSON,   |
| C. O. WHITMAN, | E. G. GARDINER, | JACOB REIGHARD, |
|                | E. G. CONKLIN.  |                 |

---

 TRUSTEES
 

---

AUGUST, 1908

## EX OFFICIO

- FRANK R. LILLIE, *Director*, University of Chicago.  
 GILMAN A. DREW, *Assistant Director*, University of Maine, Orono, Me.  
 T. H. MONTGOMERY, Jr., *Clerk of the Corporation*, University of Pennsylvania.

## TO SERVE UNTIL 1912

- W. K. BROOKS ..... Johns Hopkins University, Baltimore, Md.  
 C. W. HARGITT ..... Syracuse University, Syracuse, N. Y.  
 C. A. HERTER ..... Bellevue University Medical School, New York City.  
 H. S. JENNINGS ..... Johns Hopkins University, Baltimore, Md.  
 WILLIAM LIBBEY ..... Princeton University, Princeton, N. J.  
 A. P. MATHEWS ..... University of Chicago, Chicago, Ill.  
 M. J. GREENMAN ..... Wistar Institute of Anatomy and Biology, Philadelphia, Pa.  
 G. H. PARKER ..... Harvard University, New Haven, Conn.

## TO SERVE UNTIL 1911

- H. C. BUMPUS ..... American Museum of Natural History, New York City.  
 D. BLAKELY HOAR ..... *Treasurer*, 161 Devonshire Street, Boston, Mass.  
 W. A. LOCY ..... Northwestern University, Evanston, Ill.  
 JACQUES LOEB ..... University of California, Berkeley, Cal.  
 F. P. MALL ..... Johns Hopkins University, Baltimore, Md.  
 GEORGE T. MOORE ..... Water Mill, N. Y.  
 C. O. WHITMAN ..... University of Chicago, Chicago, Ill.

## TO SERVE UNTIL 1910

E. G. CONKLIN ..... Princeton University, Princeton, N. J.  
 ROSS G. HARRISON ..... Yale University, New Haven, Conn.  
 CAMILLUS G. KIDDER .... 27 William Street, New York City.  
 M. M. METCALF ..... Oberlin College, Oberlin, O.  
 WILLIAM PATTEN ..... Dartmouth College, Hanover, N. H.  
 D. P. PENHALLOW ..... McGill University, Montreal, Canada.  
 JACOB REIGHARD ..... University of Michigan, Ann Arbor, Mich.  
 W. B. SCOTT ..... Princeton University, Princeton, N. J.

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S. F. CLARK..... Williams College, Williamstown, Mass.  
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                                   *President of the Board.*  
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 L. L. NUNN ..... Telluride, Colo.  
 JOHN C. PHILLIPS ..... 299 Berkeley Street, Boston, Mass.  
 ERWIN F. SMITH ..... United States Department of Agriculture,  
                                   Washington, D. C.  
 E. B. WILSON ..... Columbia University, New York City.

## EXECUTIVE COMMITTEE

C. R. CRANE,	F. R. LILLIE,	E. G. CONKLIN,
C. O. WHITMAN,	E. B. WILSON,	JACOB REIGHARD.

## II. ACT OF INCORPORATION

---

No. 3170.

### COMMONWEALTH OF MASSACHUSETTS

**Be It Known**, That whereas Alpheus Hyatt, William Sanford Stevens, William T. Sedgwick, Edward G. Gardiner, Susan Minns, Charles Sedgwick Minot, Samuel Wells, William G. Farlow, Anna D. Phillips and B. H. Van Vleck have associated themselves with the intention of forming a Corporation under the name of the Marine Biological Laboratory, for the purpose of establishing and maintaining a laboratory or station for scientific study and investigation, and a school for instruction in biology and natural history, and have complied with the provisions of the statutes of this Commonwealth in such case made and provided, as appears from the certificate of the President, Treasurer and Trustees of said Corporation, duly approved by the Commissioner of Corporations, and recorded in this office:

*Now, therefore*, I, HENRY B. PIERCE, Secretary of the Commonwealth of Massachusetts, *do hereby certify* that said A. Hyatt, W. S. Stevens, W. T. Sedgwick, E. G. Gardiner, S. Minns, C. S. Minot, S. Wells, W. G. Farlow, A. D. Phillips and B. H. Van Vleck, their associates and successors, are legally organized and established as, and are hereby made, an existing Corporation, under the name of the MARINE BIOLOGICAL LABORATORY, with the powers, rights, and privileges, and subject to the limitations, duties, and restrictions, which by law appertain thereto.

*Witness* my official signature hereunto subscribed, and the seal of the Commonwealth of Massachusetts hereunto affixed, this twentieth day of March, in the year of our Lord ONE THOUSAND EIGHT HUNDRED AND EIGHTY-EIGHT.

HENRY B. PIERCE,  
*Secretary of the Commonwealth.*

[SEAL.]

### III. BY-LAWS OF THE CORPORATION OF THE MARINE BIOLOGICAL LABORATORY

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I. The annual meeting of the members shall be held on the second Tuesday in August, at the Laboratory, in Woods Hole, Mass., at 12 o'clock noon, in each year, and at such meeting the members shall choose by ballot a Treasurer and a Clerk, who shall be, *ex officio*, members of the Board of Trustees, and Trustees as hereinafter provided. At the annual meeting to be held in 1897, not more than twenty-four Trustees shall be chosen, who shall be divided into four classes, to serve one, two, three, and four years, respectively, and thereafter not more than eight Trustees shall be chosen annually for the term of four years. These officers shall hold their respective offices until others are chosen and qualified in their stead. The Director and Assistant Director, who shall be chosen by the Trustees, shall also be Trustees, *ex officio*.

II. Special meetings of the members may be called by the Trustees, to be held in Boston or in Woods Hole at such time and place as may be designated.

III. The Clerk shall give notice of meetings of the members by publication in some daily newspaper published in Boston at least fifteen days before such meeting, and in case of a special meeting the notice shall state the purpose for which it is called.

IV. Twenty-five members shall constitute a quorum at any meeting.

V. The Trustees shall have the control and management of the affairs of the Corporation; they shall present a report of its condition at every annual meeting; they shall elect one of their number President and may choose such other officers and agents as they may think best; they may fix the compensation and define the duties of all the officers and agents; and may remove them, or any of them, except those chosen by the members, at any time; they may fill vacancies occurring in any manner in their own number or in any of the offices. They shall from time to time elect members to the Corporation upon such terms and conditions as they may think best.

VI. Meetings of the Trustees shall be called by the President, or by any two Trustees, and the Secretary shall give notice thereof by

written or printed notice sent to each Trustee by mail, postpaid. Seven Trustees shall constitute a quorum for the transaction of business. The Board of Trustees shall have power to choose an Executive Committee from their own number, and to delegate to such Committee such of their own powers as they may deem expedient.

VII. The President shall annually appoint two Trustees, who shall constitute a committee on finance, to examine from time to time the books and accounts of the Treasurer, and to audit his accounts at the close of the year. No investments of the funds of the Corporation shall be made by the Treasurer except approved by the finance committee in writing.

VIII. The consent of every Trustee shall be necessary to a dissolution of the Marine Biological Laboratory. In case of dissolution, the property shall be given to the Boston Society of Natural History, or some similar public institution, on such terms as may then be agreed upon.

IX. These By-Laws may be altered at any meeting of the Trustees, provided that the notice of such meeting shall state that an alteration of the By-Laws will be acted upon.

X. Any member in good standing may vote at any meeting, either in person or by proxy duly executed.



#### IV. REPORT OF THE TRUSTEES

---

At the meeting of the trustees held in Woods Hole on August 11, 1908, the resignations of the Director of the Laboratory, Professor C. O. Whitman, and of the Assistant Director, Professor Frank R. Lillie, were presented. The trustees expressed their deep regret that Professor Whitman and Professor Lillie, after so many years of able and efficient services, should wish to resign. The letter of resignation of Professor Whitman, and the reply of the trustees is here given.

TO THE TRUSTEES OF THE MARINE BIOLOGICAL LABORATORY,  
WOODS HOLE, MASS.

*Gentlemen:* This year has brought the twenty-first birthday of the Marine Biological Laboratory. For these many years you have continued to honor me with the directorship of the laboratory. In late years I have so far drifted out of office and out of use that a formal resignation at this time can be scarcely more than an announcement of the fact accomplished. The time has arrived, however, when a reorganization seems to be imperatively demanded, and as a prelude thereto, I must ask you to accept this note as a somewhat belated announcement of my resignation of the office of director.

Let me take this opportunity to thank you one and all very heartily for the cordial support you have extended to me.

Respectfully,

C. O. WHITMAN.

#### REPLY TO THE ABOVE LETTER

August 13, 1908.

The corporation and trustees of the Marine Biological Laboratory, in accepting the resignation of the Director, Professor C. O. Whitman, have ordered to be put upon their records and to be forwarded to Doctor Whitman the following minute:

The corporation and trustees desire to express to the retiring director their regret that he finds it necessary to withdraw from the active directorship of the laboratory, and their appreciation of the inestimable value of his services. Since the establishment of the laboratory at Woods Hole twenty-one years ago, he has been continuously its director and he has to a very large extent guided its growth and development. He has stood for the principles of coöperation and independence which have made the laboratory unique in its character and truly national in its reputation and influence. His high ideals and his generous appreciation of the work of others have been an inspiration to the many biologists, who, during these years, have attended the laboratory. These ideals are the most valuable possession of the laboratory.

The corporation and trustees desire that the retiring director may continue to serve the laboratory as honorary director and trustee and that his presence at the laboratory may continue to be an inspiration in the future as in the past.

TO THE CORPORATION AND TRUSTEES OF THE MARINE BIOLOGICAL  
LABORATORY, WOODS HOLE, MASS.

*Ladies and Gentlemen:* Your action of August 13, in which you express a desire to have me serve the laboratory as "honorary director and trustee" is in itself alone an all-sufficient reward for whatever service I have rendered as director. Your *good will* is the all-important recompense, and no title that you could confer could add to the weight of your approbation. In fact, titles belittle the spirit. Let me have the latter without the former—without title or office of any kind. Please respect this wish and believe me, as ever, a sincere and devoted friend of the laboratory.

Respectfully and cordially,

C. O. WHITMAN.

Professor Whitman's resignation as director of the Marine Biological Laboratory, after twenty-one years of service in that position, impressively recalls the inestimable value of his services in the establishment and development of this institution. If we

have to-day one of the leading marine laboratories of the world, we owe it in large part to him. The interest of almost every member of this board of trustees and of the corporation was enlisted through his efforts, and the splendid influence which the Marine Biological Laboratory has had upon the development of biology in this country is traceable ultimately to him.

His connection with the laboratory began at a time when it had neither permanent home, recognized standing, nor scientific ideals. Some of the leading biologists of this country felt that it could not compete as a research station with the U. S. Fish Commission Station, backed as the latter was by the resources of the government, and that its chief field of usefulness must be as a summer school. Whitman thought otherwise, and by his real greatness as a scientist, his untiring energy and enthusiasm, his splendid ideals and his unfailing faith and courage he made it from the start the principal center in America for biological research.

From start to finish his ideals for the laboratory were these: (1) A national center for research in every department of biology; (2) a laboratory founded upon the coöperation of individuals and institutions; (3) An organization independent in its government and free to follow its natural course of growth and development. For these ideals he has labored consistently and persistently year after year, sometimes with a disregard of present advantage, to be gained by the sacrifice of one or the other of these ideals, which cost him friendships which he highly prized. At one particular crisis he wrote: "If I have made any enemies through unkindness or injustice, I am sincerely sorry for it; but if I have made any because I have stated my conviction on the question before us I can afford to part with all friends who are made enemies for such a cause. Do not think that I seek enemies or value lightly real friends." His faith in the ultimate achievement of these ideals was so great that he chose rather to sacrifice present good than, as he believed, the future welfare of the laboratory; and his plans for the laboratory were so great, while current resources were so small, that he was frequently charged with being impractical. But it is only fair and just to recognize how much was accomplished by ad-

herence to these ideals and to what an extent the spirit and success of the laboratory are due to them.

Woods Hole is indeed a national center for research in several branches, if not in every department, of biology. Whitman had the wisdom to see that biology could progress only as a whole. "The great charm of a biological station," he wrote, "must be the fullness with which it represents the biological system. Its power and efficiency diminish in geometrical ratio with every source of light excluded." To zoölogy, which was the only subject represented at first, he added botany and physiology and he strove to make Woods Hole a center in each of these departments. He was one of the first to insist upon adequate provision for experimental work. He was, we believe, the first in this country to plan and plead for a biological farm for the study of problems of heredity and evolution. He desired to make Woods Hole a center for the comparative study of anatomy, pathology and psychology. Some of these lines of work have since been taken up and largely developed elsewhere, but if Whitman could have had the necessary support in his plans they would have been centered at Woods Hole. This need of a national center of research in every department of biology is still before the laboratory as a living issue, and although this grand concept has so far failed of complete realization, who can say how much the laboratory owes to this catholicity of spirit of its director, how much biology as a whole owes to this splendid ideal?

If the laboratory was to be truly national, Professor Whitman believed that it must be founded upon the coöperation of individuals and institutions; no one man nor institution, however great, could accomplish this purpose. He recognized that common ideals must form the basis of such coöperation, and he sought to bring into close connection with the laboratory every person and every institution that shared these ideals with himself. With these ideals, and by means of his own personal charm and scientific abilities, Whitman secured the coöperation of many of the younger biologists of the country. There was thus developed at Woods Hole a center for research work in biology which has had few equals in the history of the world. By his own work, as well as by his appreciation of the really funda-

mental problems of biology, he has set a very high standard for the scientific work of the laboratory, and by his kindness, sincerity, and generosity he has called forth similar qualities in others, so that it has been characteristic of Woods Hole, as of few other laboratories at home or abroad, that a spirit of genuine coöperation and mutual helpfulness prevails. Who that experienced it can ever forget the inspiration and enthusiasm of those early years of the laboratory? Who of us can forget the cordial appreciation and generous encouragement which we received from Professor Whitman? Some of us feel that we there incurred a debt of gratitude to him which we can never fully repay. Since those early years other laboratories have arisen and other duties have drawn men away from Woods Hole, but the Marine Biological Laboratory never loses its charm for those who have worked there, and this charm will continue as long as the spirit of generous coöperation, which Whitman instilled into it, prevails.

Finally, Professor Whitman stood for the complete autonomy of the laboratory. Although aid might have been had more than once from universities and institutions by surrendering the independence of the laboratory, he steadfastly and consistently refused to do this, even though in doing so he had to face the opposition of almost all the members of the board of trustees and the corporation. There is still a difference of opinion as to the expediency of this stand, but there is probably no question as to the desirability of the autonomy. If the laboratory can obtain endowments such as to provide for its present and future needs and to insure its independence we shall all greatly rejoice, but whether it shall succeed in this aim or not, we are probably all agreed that this much at least of Professor Whitman's ideal must be maintained, viz: that the laboratory must be left free to grow and develop as its own needs and the interests of science demand.

These are the ideals which Professor Whitman has succeeded in making part and parcel of the Marine Biological Laboratory and which we count among our most valuable possessions. To those who measure the success of an institution by the size of its buildings or endowments, his efforts at Woods Hole may

seem in large part to have failed, but those who realize that ideals are the motive forces of the world, that life consists not in abundance of possessions but in abundance of service, that science is not paraphernalia but knowledge—these will not fail to recognize the great value of the work Professor Whitman has done for the Marine Biological Laboratory and for the whole science of biology.

The trustees desire to place in the records of the laboratory the following statement:

By the unanimous vote of the trustees the position of director was tendered to Professor Frank R. Lillie. His acceptance of this post has given the trustees the greatest satisfaction. They feel not only that the material future of the laboratory is assured under his management, but also that the high scientific ideals of the laboratory will be maintained.

The trustees wish to take this opportunity to express to Professor Lillie, as they have to Professor Whitman, their recognition of his splendid service in behalf of the laboratory. They are encouraged to believe that the affairs of the laboratory could not have been placed in abler hands. They wish to make public recognition of their appreciation of Professor Lillie's past services to the laboratory and to express to him their confidence in entrusting the future of the laboratory to his care.

The trustees are also able to announce that Professor Gilman A. Drew, who has successfully had in charge for years first the course in zoölogy and later that in embryology, has accepted the position of assistant director. His acceptance of this position is a guarantee that the part of the executive management of the laboratory which falls to his share will be ably conducted.

## V. REPORT OF THE TREASURER

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### SUMMARY OF THE REPORTS OF THE TREASURER OF THE MARINE BIOLOGICAL LABORATORY JANUARY 1, 1907, TO DECEMBER 31, 1908

#### RECEIPTS

Cash on hand January 1, 1907.....	\$	1.19	
Income for 1907.....		15,779.70	
Income for 1908.....		<u>17,452.18</u>	\$33,233.07

#### DISBURSEMENTS

Expenses for 1907.....	\$	15,638.38	
Expenses for 1908.....		17,476.25	
Cash on hand December 29, 1908.....		<u>118.44</u>	\$33,233.07

ITEMIZED STATEMENT OF INCOME AND EXPENSES FOR  
THE YEAR 1907

INCOME

Annual dues .....	\$ 388.00	
Donations .....	7,000.00	
Miscellaneous .....	384.61	
Supply Department .....	5,177.09	
Tuitions .....	2,830.00	\$15,779.70

EXPENSES

Administration .....	214.60	
Advertising .....	73.15	
Biological Bulletin .....	706.51	
Boats and launch .....	1,632.98	
Chemicals, chemist supplies, etc.....	519.14	
Fish trap .....	81.17	
Instructors' salaries .....	1,975.00	
Interest .....	180.50	
Labor .....	3,063.01	
Periodicals and library supplies.....	461.16	
Postage .....	159.40	
Repairs .....	911.18	
Sundries .....	2,375.79	
Supply Department .....	3,284.79	\$15,638.38
Surplus .....		\$ 141.32



# ITEMIZED STATEMENT OF INCOME AND EXPENSES FOR THE YEAR 1908

## INCOME

Annual dues .....	\$ 447.00	
Donations .....	7,401.78	
Fish trap .....	40.13	
Miscellaneous:		
Interest on deposits.....	\$ 30.80	
Bath House .....	48.00	
Mess .....	121.00	199.80
Supply Department .....	6,630.13	
Tuitions .....	<u>2,733.34</u>	\$17,452.18

## EXPENSES

Administration .....	\$ 150.00	
Advertising .....	128.05	
Bath Houses .....	70.32	
Biological Bulletin .....	592.67	
Boats and launch.....	747.71	
Chemicals, chemist supplies, etc.....	752.20	
Instructors' salaries .....	2,400.00	
Insurance .....	688.54	
Interest .....	150.00	
Labor .....	3,333.30	
Periodicals and library supplies.....	612.53	
Postage .....	141.32	
Repairs .....	739.41	
Sundries .....	2,289.82	
Supply Department .....	4,680.38	\$17,476.25
Deficit .....		\$ 24.07

# MARINE BIOLOGICAL LABORATORY INVESTMENTS

JANUARY 1, 1909

Reserve fund (previously called Endowment Fund) :

Amount of fund January 1, 1907 .....	\$ 937.49	
Income to January 1, 1909 .....	324.00	\$ 1,261.49

Reserve fund now consists of the following:

\$3,000 Am. Tel. & Tel. Co. 4s, cost.....	2,921.25
6 shs. Am. Smelting & Refining Co. Pfd., cost	732.00
Cash .....	608.24
	<u>4,261.49</u>

The above stocks and bonds are held as col-

lateral for loan of \$3,000.....	3,000.00	1,261.49
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## LIBRARY FUND

Amount of fund January 1, 1907.....	1,378.50	
Income to January 1, 1909.....	126.00	
Sale of rights.....	.81	1,505.31

The Library Fund now consists of the following:

3 shs. Am. Tel. & Tel. Co., cost.....	383.25
½ of \$1,000 Am. Tel. & Tel. Co. 4s, cost.....	779.00
1 sh. Am. Smelting & Refining Co. Pfd., cost	122.00
Cash .....	221.06
	<u>1,505.31</u>

## LUCRETIA CROCKER FUND

Amount of Fund January 1, 1907.....	2,906.41	
Sale of rights.....	.94	
Income after paying students' fees.....	55.00	2,962.35

The Crocker Fund now consists of the following:

18 shs. Vermont & Mass. R. R. Co., cost...	2,416.50
1 sh. West End St. Ry. Co., cost.....	83.00
1 sh. Am. Tel. & Tel. Co., cost.....	127.75
½ of \$1,000 Am. Tel. & Tel. Co. 4s, cost....	194.75
Cash .....	140.35
	<u>2,962.35</u>

## DONATIONS NOT PREVIOUSLY ACKNOWLEDGED

Mr. C. R. Crane.....	11,000.00
Mrs. Frank R. Lillie.....	3,401.78

## VI. THE DIRECTOR'S REPORT

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### I. INTRODUCTION

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TO THE TRUSTEES OF THE MARINE BIOLOGICAL LABORATORY.

*Gentlemen:* I beg leave to submit herewith a report concerning the work of the Marine Biological Laboratory for the years 1907-1908, with an appendix containing a compilation of the publications which have been based, wholly or in part, on work done at the Laboratory during the entire period of its existence. In this introductory statement I shall comment briefly on the general functions of the Laboratory and on each of the main divisions of the report. Acknowledgments are due the treasurer and the librarian for their contributions to the report.

The year 1908 was marked by the resignation of Professor Whitman who had served the laboratory as director from its birth to its coming of age. It has rarely happened that the spirit and ideals of an institution have approximated so closely to the conceptions of its director. No greater tribute could be paid to the wisdom and forethought of the ideals with which Professor Whitman endowed the laboratory at its start than the fact that they have proved the fertile germ of the ideals to which, after twenty-one years of trial, we still remain loyal. Through the organization of the Marine Biological Laboratory Professor Whitman has impressed his high conceptions of scientific investigation upon biology in America, and has thus contributed more than any other single person to the present high status of biological investigation in this country.

The continuation of the work of the Laboratory so that it shall maintain a high standing and continue as an effective factor in the progress of biological investigation imposes no light responsibility upon the trustees and officers. Our purpose is essentially ideal and its pursuit demands our best efforts and our loyalty. I believe that we should continue to maintain the

coöperative relations of research and instruction that have always given our laboratory a special character; that we should cultivate the coöperation of institutions of learning and of naturalists from all parts of America, and that we should maintain our democratic form of organization. In the membership of our corporation and of our board of trustees we have a large proportion of the best representatives of biological research. Their continued loyalty to the organization and purposes of the Laboratory will inevitably secure its success; our organization and ideals must therefore be such as to commend themselves to our large constituency.

*Trustees.*—During the past year the following new members have been added to the board of trustees: Dr. Milton J. Greenman, director of the Wistar Institute of Anatomy and Biology of Philadelphia; Professor G. H. Parker, of Harvard University; Professor Ross G. Harrison, of Yale University, and Professor T. H. Montgomery, Jr., of the University of Pennsylvania. The best thanks of the board of trustees is due these gentlemen for their willingness to serve, and the Laboratory is to be congratulated on the increase in prestige and usefulness assured by their presence on the board. We have to record with profound regret and sorrow the loss by death of the distinguished professor of zoölogy of Johns Hopkins University, William Keith Brooks, who has been a member of the board since 1893.

*Staff.*—At the close of the season of 1907 Professor Drew resigned as head of the Department of Zoölogical Instruction and his place was filled most ably in 1908 by Professor W. C. Curtis, of the University of Missouri, whose previous long connection with the Laboratory fitted him unusually well to take up this important work. Professor Drew took charge of the instruction in embryology in 1908. Both of these gentlemen will continue in charge of their departments. Professor Drew has also acted as assistant director since last August at the request of the director, and his formal appointment to this office is recommended. Professor A. P. Mathews continued in charge of physiology, and Dr. George T. Moore in charge of botany; special acknowledgments are due both for rendering their services without compensation.

*Subscribing Institutions.*—The number of subscribing institu-

tions which provide for the fees of students or rental of research rooms was sixteen in 1907 and seventeen in 1908; Rochester University, the University of Cincinnati, Vassar Brothers' Institute, and the U. S. Department of Agriculture dropped out, and McGill University, Pennsylvania State School of Forestry, Williams College, the Wistar Institute of Anatomy and Biology and Yale University were added in 1908. The Wistar Institute subscribed for five rooms and permitted the director of the laboratory to nominate occupants, thus providing for one of our greatest needs. The extension of the system of coöperating institutions is greatly to be desired, and there can be no doubt that it is possible.

*Attendance.*—The total attendance was 107 in 1907 and 100 in 1908; of this number 60 were investigators in 1907 and 52 in 1908. The principal loss in attendance in recent years has been due to a decrease in the number of the class of beginning investigators; a fact to be regretted because it is from this class that fruitful investigators are to be recruited. The number of independent investigators has decreased but little, being 50 in 1907 and 46 in 1908, two less in physiology and in botany and the same number in zoölogy. It is entirely improbable that the slight decrease in attendance represents any permanent defection, for the character of the support of the laboratory has, if anything, increased in quality rather than diminished. And the growing tendency for biologists to establish summer homes of their own in the immediate neighborhood of the Laboratory is a sign and assurance of stability that outweighs any slight fluctuation of numbers. Nevertheless, it is to be hoped that everything possible may be done to increase the attendance of young investigators, for one of the most valuable functions of the laboratory in the past has been to stimulate the desire and ambition for research.

The number of students in 1908 was one more than in 1907, 48 and 47 respectively. The addition of new courses in 1908 did not bring the expected increase in attendance, but it is hoped that it may do so in 1909. So large an attendance of students as used to come to Woods Hole is hardly to be expected, in view of the more considerable competition of summer courses in uni-

versities and other laboratories. Indeed a large increase of students is not to be desired, though we could well care for some more.

*Treasurer's Report.*—The report of the treasurer again shows an income sufficient for our expenditures, if not for our needs. And again it will be seen that a very large proportion of income is in the form of donations, for the major portion of which we are indebted to the president of the board. Mr. Crane's sympathetic and continual generosity puts us under a load of obligation which we can repay only by devotion of our time and best endeavors to the interests of the laboratory.

Our four main sources of income are: fees for tuition, rental of rooms, sale of biological material and donations. The last is the measure of our deficit, and it is to be questioned if the latter can be reduced relative to the sources of income proper. There is a continual tendency for increase in expense of maintenance due to higher salaries for the greater efficiency that comes of long service, the increasing complexity of means of investigation and the growing cost of everything. We can hardly expect a great increase in tuition fees, though there should be some improvement there. But by our united endeavors we can surely increase the number of subscriptions for rental of rooms. Many rooms are now given free, a policy that has been of great service both to individual investigators and to the Laboratory. It is not proper, nor should we propose, to put the burden of room rents on the shoulders of investigators, but institutions can and should provide for the facilities used by members of their staffs. The cash receipts of the supply department have increased from \$2,578.85 in 1900 to \$5,616.54 in 1906, and \$6,630.13 in 1908. We are far from having reached the limit of possibilities in this direction, and a steady growth is to be expected.

*Research Seminar and Evening Lectures.*—The research seminar and evening lectures have been continued; they have been well attended, and their influence has been good. The physiology lectures under Dr. Mathews' direction have been a great attraction; a large number of investigators have taken part and the discussions have been lively and stimulating.

Publication of the evening lectures ceased some years ago

when the publishers refused longer to bear the deficit. While it is hardly probable that the sale of volumes of the evening lectures can be made to pay the expense of publication, owing to the fact that they appeal for the most part to professional biologists, it should nevertheless be possible to issue them at relatively slight net expense. There can be no question that they filled a decided want. They formed an important element in the general prestige of the laboratory and gave expression to the forms of investigation characteristic of the time and place better than anything else. It is therefore desirable that their publication should be resumed, and this is recommended.

*Library.*—Miss Clapp, who has served as librarian for many years without compensation and with entire devotion to the interests of the Laboratory, has retired; Dr. Knower, of Johns Hopkins University, is recommended as her successor. While there is a useful collection of books in the library, much remains to be done, and it is to be hoped that considerable additions may be made without much cost by exchange and solicitation of donations of proceedings of learned societies. One of the most important special needs of the Laboratory is a fireproof building and endowment for library purposes. It would add greatly to the attractiveness of Woods Hole, and would facilitate the work of every investigator.

*Corporation.*—The membership of the corporation should receive the earnest attention of the trustees. Under our democratic organization it is the court of last resort. Its membership should therefore be as representative as possible and no pains should be spared to secure desirable members, and give them reason for real interest in laboratory affairs.

*International Zoölogical Congress.*—The season of 1907 is memorable in our annals for the visit of the Seventh International Zoölogical Congress to Woods Hole. Some foreign members of the congress came early to America to avail themselves of the opportunity for work at the Marine Biological Laboratory. Others made a relatively long visit. The official visit of the congress was made on August 25, 1907. Fifty members came down by special invitation on the preceding evening and were entertained by the Forbes family at Naushon, by the Bureau of

Fisheries, and by members of the Laboratory in their homes. The balance of the members came next morning, and all were greeted by Professor Whitman for the Marine Biological Laboratory and Doctor Sumner for the Bureau of Fisheries. Inspection of the laboratories followed and lunch was served at the Mess. In the afternoon the U. S. Fish Commission steamer, "Fish Hawk," carried the party to New Bedford, where they embarked for New York.

A special feature of the occasion was the signing of a greeting to the director of the Zoölogical Station of Naples. The names signed to this greeting (see p. 45) constitute the only roster of attendance at Woods Hole.

*Publications of the Laboratory.*—A research institution with a resident staff has a ready record of its achievements in the publications of its members. But a large part of the achievements of an institution such as ours consists in somewhat elusive influences, and it is difficult to estimate the concrete achievements in the way of publications because in many cases only a part of each research which is undertaken at the laboratory is actually accomplished there. In many cases it is the chief part; in other cases only a secondary part. It is perhaps for this reason that the only report on publications from the laboratory is a partial one made in 1895. In preparing the list of publications from the Marine Biological Laboratory (see p. 57) which forms part of the director's report, all those who have worked at the Laboratory were requested to furnish a list of their publications based wholly or in part on work accomplished at the Marine Biological Laboratory. The labor of compilation has been a considerable one, and is only approximately complete. However, the great majority of investigators have been most kind in furnishing lists of their own publications and it is believed that the list will give a more adequate conception than anything else of the activities of the Laboratory in research.



## 2. THE STAFF, 1907

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C. O. WHITMAN, DIRECTOR,  
Professor of Zoölogy, University of Chicago.

F. R. LILLIE, ASSISTANT DIRECTOR,  
Associate Professor of Embryology, University of Chicago.

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### ZOOLOGY

#### I. INVESTIGATION

- E. G. CONKLIN ..... Professor of Zoölogy, University of Pennsylvania.  
C. W. HARGITT ..... Professor of Zoölogy, Syracuse University.  
GEORGE LEFEVRE ..... Professor of Zoölogy, University of Missouri.  
WARREN H. LEWIS ..... Associate Professor of Anatomy, Johns Hopkins University.  
FRANK R. LILLIE ..... Associate Professor of Embryology, University of Chicago.  
T. H. MORGAN ..... Professor of Experimental Zoölogy, Columbia University.  
C. O. WHITMAN ..... Professor of Zoölogy, University of Chicago.  
E. B. WILSON ..... Professor of Zoölogy, Columbia University.

#### II. INSTRUCTION

- GILMAN A. DREW ..... Professor of Biology, University of Maine.  
R. A. BUDINGTON ..... Instructor in Biology, Wesleyan University, Conn.  
OTTO C. GLASER ..... Instructor in Zoölogy, University of Michigan.  
LORANDE L. WOODRUFF .. Instructor in Biology, Williams College.  
PAUL M. REA ..... Professor of Biology, College of Charleston, and Director of the Charleston Museum.  
MAX MORSE ..... Tutor in Natural History, College of the City of New York.

**COMPARATIVE PHYSIOLOGY**

- ALBERT P. MATHEWS .... Professor of Physiological Chemistry, University of Chicago.
- R. S. LILLIE ..... Instructor in Physiological Zoölogy, University of Pennsylvania.
- A. J. CARLSON ..... Assistant Professor of Physiology, University of Chicago.
- EDWARD G. SPAULDING .. Assistant Professor of Philosophy, Princeton University.
- OLIVER P. TERRY ..... Instructor in Physiology, Purdue University.
- HORATIO H. NEWMAN ... Instructor in Zoölogy, University of Michigan.

**BOTANY**

- GEORGE T. MOORE ..... Washington, D. C.
- GEORGE R. LYMAN ..... Assistant Professor of Botany, Dartmouth College.
- IVEY FOREMAN LEWIS ... Fellow in Botany, Johns Hopkins University.

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CORNELIA M. CLAPP, Librarian.

OLIVER S. STRONG, Chemist.

MARION C. GILE, Assistant Librarian.

K. HAYASHI, Artist.

KENJI TODA, Artist.

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G. M. GRAY, Curator of Supply Department.

JOHN VEEDER, Cockswain.

## THE STAFF, 1908

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C. O. WHITMAN, DIRECTOR,

Professor of Zoölogy, University of Chicago.

F. R. LILLIE, ASSISTANT DIRECTOR,

Professor of Embryology, University of Chicago.

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### ZOOLOGY

#### I. INVESTIGATION

- E. G. CONKLIN ..... Professor of Zoölogy, University of Pennsylvania.
- C. W. HARGITT ..... Professor of Zoölogy, Syracuse University.
- ROSS G. HARRISON ..... Professor of Comparative Anatomy, Yale University. (Absent in 1908.)
- GEORGE LEFEVRE ..... Professor of Zoölogy, University of Missouri.
- WARREN H. LEWIS ..... Associate Professor of Anatomy, Johns Hopkins University.
- FRANK R. LILLIE ..... Professor of Embryology, University of Chicago.
- T. H. MORGAN ..... Professor of Experimental Zoölogy, Columbia University.
- C. O. WHITMAN ..... Professor of Zoölogy, University of Chicago.
- E. B. WILSON ..... Professor of Zoölogy, Columbia University.

#### II. INSTRUCTION

- WINTERTON C. CURTIS .. Professor of Zoölogy, University of Missouri.
- LORANDE L. WOODRUFF .. Instructor in Biology, Yale University.
- PAUL M. REA ..... Professor of Biology, College of Charleston, and Director of the Charleston Museum.
- WEBSTER CHESTER ..... Associate Professor of Biology, Colby College.

- EDWARD E. WILDMAN .. Fellow in Zoölogy, Princeton University.  
 JOHN W. SCOTT ..... Westport High School, Kansas City.  
 A. S. PEARSE ..... Instructor in Zoölogy, University of Michigan.

### EMBRYOLOGY

- GILMAN A. DREW ..... Professor of Biology, University of Maine.  
 LORANDE L. WOODRUFF .. Instructor in Biology, Yale University.  
 WILLIAM E. KELLICOTT.. Professor of Biology, Woman's College of Baltimore.  
 HARVEY E. JORDAN ..... Adjunct Professor of Anatomy, University of Virginia.

### PHYSIOLOGY

- ALBERT P. MATHEWS .... Professor of Physiological Chemistry, University of Chicago.  
 E. P. LYON ..... Professor of Physiology, University of St. Louis.  
 R. S. LILLIE ..... Instructor in Comparative Physiology, University of Pennsylvania.  
 EDWARD G. SPAULDING .. Assistant Professor of Philosophy, Princeton University.

### BOTANY

- GEORGE T. MOORE ..... Water Mill, New York.  
 JOHN M. COULTER ..... Professor of Botany, University of Chicago.  
 B. M. DUGGAR ..... Professor of Plant Physiology, Cornell University.  
 HENRY KRAEMER ..... Professor of Botany, Philadelphia College of Pharmacy.  
 HERMANN VON SCHRENK. Pathologist, Missouri Botanical Garden.  
 ERWIN F. SMITH ..... In charge of Laboratory of Plant Pathology, United States Department of Agriculture.  
 M. B. THOMAS ..... Professor of Botany, Wabash College.  
 GEORGE R. LYMAN ..... Assistant Professor of Botany, Dartmouth College.  
 C. J. CHAMBERLAIN .... Assistant Professor of Botany, University of Chicago.

R. R. GATES ..... Assistant in Botany, University of Chicago.  
C. H. SHATTUCK ..... Assistant in Botany, University of Chicago.  
W. R. MAXON ..... Assistant Curator, U. S. National Museum.  
ARTHUR W. TAYLOR .... Principal High School, Hampstead, N. H.,  
Assistant Collector.  
JACOB SCHRAMM ..... Wabash College, Assistant Collector.

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CORNELIA M. CLAPP, Librarian.  
OLIVER S. STRONG, Chemist.  
KENJI TODA, Artist.

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G. M. GRAY, Curator of Supply Department.  
JOHN VEEDER, Cockswain.

### 3. SUBSCRIBING INSTITUTIONS, 1907

---

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

MOUNT HOLYOKE COLLEGE.

ROCHESTER UNIVERSITY.

SMITH COLLEGE.

SYRACUSE UNIVERSITY.

UNIVERSITY OF CHICAGO.

COLUMBIA UNIVERSITY.

UNIVERSITY OF PENNSYLVANIA.

UNIVERSITY OF CINCINNATI.

VASSAR COLLEGE.

WELLESLEY COLLEGE.

WOMAN'S COLLEGE OF BALTIMORE.

KANSAS UNIVERSITY WOMAN'S TABLE SUPPORTED BY MRS. ROBINSON.

VASSAR BROTHERS' INSTITUTE.

UNIVERSITY OF MICHIGAN, BRYANT WALKER SCHOLARSHIP.

UNITED STATES DEPARTMENT OF AGRICULTURE.

## SUBSCRIBING INSTITUTIONS, 1908

---

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

COLUMBIA UNIVERSITY.

KANSAS UNIVERSITY WOMAN'S TABLE SUPPORTED BY MRS. ROBINSON.

LUCRETIA CROCKER SCHOLARSHIP, BOSTON PUBLIC SCHOOLS.

MCGILL UNIVERSITY.

MOUNT HOLYOKE COLLEGE.

PENNSYLVANIA STATE SCHOOL OF FORESTRY.

SMITH COLLEGE.

SYRACUSE UNIVERSITY.

UNIVERSITY OF CHICAGO.

UNIVERSITY OF MICHIGAN.

UNIVERSITY OF PENNSYLVANIA.

VASSAR COLLEGE.

WELLESLEY COLLEGE.

WILLIAMS COLLEGE, WALKER SCHOLARSHIP FUND.

WISTAR INSTITUTE OF ANATOMY AND BIOLOGY.

WOMAN'S COLLEGE OF BALTIMORE.

YALE UNIVERSITY.

## 4. INVESTIGATORS AND STUDENTS,

1907-1908

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### INVESTIGATORS

1907

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#### a. OCCUPYING PRIVATE ROOMS

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##### i. ZOOLOGY

BONNEVIE, KRISTINE E. H., Konservator, University of Kristiania, Norway.  
BUDINGTON, R. A., Instructor in Biology, Wesleyan University, Middletown, Conn.

CHILD, CHARLES M., Assistant Professor of Zoölogy, University of Chicago, Chicago, Ill.

CONKLIN, EDWIN G., Professor of Zoölogy, University of Pennsylvania, Philadelphia, Pa.

COOKE, ELIZABETH, Kearsage Village, New Hampshire.

DICKERSON, MARY C., Providence, Rhode Island.

DOWNING, ELLIOT ROWLAND, Northern State Normal School, Marquette, Michigan.

DREW, GILMAN A., Professor of Biology, University of Maine, Orono, Maine.

GARDINER, EDWARD G., 131 Mt. Vernon Street, Boston, Mass.

GLASER, O. C., Instructor in Zoölogy, University of Michigan, Ann Arbor, Michigan.

VON GRAFF, LUDWIG, Professor of Zoölogy and Anatomy, K. k. Universität, Graz, Austria.

GUYER, M. F., Professor of Zoölogy, University of Cincinnati.

HEATH, HAROLD, Professor of Invertebrate Zoölogy, Stanford University, Palo Alto, California.

LEFEVRE, GEORGE, Professor of Zoölogy, University of Missouri, Columbia, Missouri.

LEWIS, WARREN H., Associate Professor of Anatomy, Johns Hopkins University, Baltimore, Md.

LILLIE, FRANK R., Professor of Embryology, University of Chicago, Chicago, Illinois.



- LOEB, LEO, Associate Professor of Experimental Pathology, University of Pennsylvania, Philadelphia, Pa.
- MAAS, OTTO, University of Munich, Munich, Germany.
- MAST, SAMUEL OTTMAN, Professor of Biological Sciences, Hope College.
- MORGAN, THOMAS H., Professor of Experimental Zoölogy, Columbia University, New York City.
- MORSE, MAX, Tutor in Natural History, College of the City of New York, New York City.
- MURBACH, LOUIS, Head of Department of Biology, Central High School, Detroit, Michigan.
- NOGUCHI, HIDEYO, Associate Professor, Rockefeller Institute for Medical Research.
- REA, PAUL M., Professor of Biology, College of Charleston and Director of Charleston Museum, Charleston, S. C.
- SCOTT, JOHN W., Instructor in Biology, Westport High School, Kansas City, Missouri.
- STREETER, GEORGE L., Associate Professor of Neurology, Wistar Institute of Anatomy, Philadelphia, Pa.
- STRONG, O. S., Instructor in Normal Histology and Embryology, Columbia University, New York City.
- TINGLE, J. BISHOP, Professor of Chemistry, McMaster University, Toronto, Canada.
- WHITMAN, C. O., Professor of Zoölogy, University of Chicago, Chicago.
- WILHELME, FELIUS, Stazione Zoologica, Naples, Italy.
- WILSON, EDMUND B., Professor of Zoölogy, Columbia University, N. Y.
- WOODRUFF, LORANDE L., Instructor in Biology, Williams College, Williamstown, Mass.

## 2. PHYSIOLOGY

- CARLSON, A. J., Assistant Professor of Physiology, University of Chicago, Chicago, Ill.
- LILLIE, RALPH S., Instructor in Physiological Zoölogy, University of Pennsylvania, Philadelphia, Pa.
- MATHEWS, ALBERT P., Professor of Physiological Chemistry, University of Chicago, Chicago, Ill.
- MEEK, WALTER J., Professor of Biology, Penn College, Oskaloosa, Iowa.
- NEWMAN, HORATIO H., Instructor in Zoölogy, University of Michigan, Ann Arbor, Mich.
- PACKARD, WALES H., Assistant Professor of Biology, Bradley Polytechnic Institute, Peoria, Ill.
- SPAULDING, EDWARD G., Assistant Professor of Philosophy, Princeton University, Princeton, N. J.
- TERRY, OLIVER P., Professor of Physiology, Indiana Medical College, West Lafayette, Ind.

### 3. BOTANY

- KELLERMAN, KARL F., Department of Agriculture, Washington, D. C.  
 LEWIS, IVEY FOREMAN, Fellow in Botany, Johns Hopkins University.  
 LYMAN, GEORGE RICHARD, Assistant Professor of Botany, Dartmouth College, Hanover, N. H.  
 MACRAE, LILLIAN J., Teacher, South Boston High School, South Boston, Mass.  
 MOORE, GEORGE T., West Chester, Pa.  
 SNOW, JULIA WARNER, Associate Professor of Botany, Smith College.  
 STICKNEY, MALCOLM E., Assistant Professor of Botany, Denison University.  
 SMITH, Dr. ERWIN F., Department of Agriculture, Washington, D. C.  
 QUIRK, AGNES JOHANNA, U. S. Department of Agriculture, Washington, D. C.  
 HEDGES, FLORENCE, U. S. Department of Agriculture, Washington, D. C.

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## b. OCCUPYING TABLES

---

### 1. ZOOLOGY

- BECKWITH, CORA J., Instructor in Biology, Vassar College, Poughkeepsie, N. Y.  
 BROWNE, ETHEL NICHOLSON, Student, Columbia University, New York City.  
 COOK, MARGARET HARRIS, Fellow in Biology, University of Pennsylvania, Philadelphia, Pa.  
 GOLDFARB, A. J., Graduate Student, Columbia University, New York City.  
 KIMURA, TOKENZO, Student, Columbia University, New York City.  
 MORGULIS, SERGIUS, Fellow in Zoölogy, Columbia University, New York City.  
 SHOREY, MARION L., Fellow in Zoölogy, University of Chicago, Chicago, Ill.  
 TOMPKINS, ELIZABETH M., Teacher, High School, Poughkeepsie, N. Y.  
 YOUNG, ROBERT T., Instructor in Biology, University of North Dakota.

### 2. PHYSIOLOGY

- BUNZEL, HERBERT H., Assistant in Physiological Chemistry, University of Chicago, Chicago, Ill.

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## STUDENTS

1907

---

### 1. ZOOLOGY

1. BACON, CHARLES MELVILLE, Beloit College.
2. BECKWITH, ANGIE MARIA, Vassar College.

3. BICKEL, MARY S., Smith College.
4. BISHOP, MABEL, Wellesley College.
5. BISSELL, HAROLD I., Rochester, N. Y.
6. BOX, CORA MAY, University of Cincinnati.
7. CARR, GLORIA W., University of Missouri.
8. CHIDESTER, FLOYD EARLE, Syracuse University.
9. DOWELL, ANITA SHEMWELL, Woman's College of Baltimore.
10. FRAZEE, MARY LOUISE, Woman's College of Baltimore.
11. FURST, WALTER BENEDICT, Penn. State College.
12. HAINES, GEORGE CLARK, Beloit College.
13. HALLOCK, FRANCES A., New York Normal College.
14. HOGE, MILDRED A., Woman's College of Baltimore.
15. JOHNSON, ARTHUR W., Beloit College.
16. KITE, GEORGE LESTER, Princeton University.
17. LEAHY, GEORGE V., St. John's Seminary, Brighton, Mass.
18. LYON, MARY B., Mt. Holyoke College.
19. MARSHALL, MARGARET E., University of Texas.
20. MERRIAM, CHARLES G., Lexington, Mass.
21. PACKARD, CHARLES, Syracuse University.
22. PAFFORD, HOWARD THOMAS, Williams College.
23. PALMER, SAMUEL COPELAND, Swarthmore Preparatory School.
24. PARET, ANNIE ELIZABETH, Miss Hill's School for Girls, Philadelphia.
25. PERKINS, MILLICENT E., Mt. Holyoke College.
26. RAND, CARL WHEELER, Williams College.
27. SADLER, NETTIE M., Syracuse High School.
28. SHULL, AARON FRANKLIN, University of Michigan.
29. SPENCER, HENRY JAMES, Syracuse University.
30. SPOONER, GEORGINA B., Vassar College.
31. STEWART, NORMAN H., University of Rochester.
32. STRONGMAN, ELIZABETH J., Girls' High School, Roslindale.
33. TAYLOR, HELEN GREY, Vassar College.
34. WHITMAN, FRANK W., Hyde Park High School, Chicago.

## 2. BOTANY

1. BUNTON, LILLIAN E., University of Kansas.
2. BUSHEE, GRACE LYDIA, Smith College.
3. JACKSON, ETHEL ALICE, Mt. Holyoke College.
4. MUDGE, CORA BELL, Bowditch School, Boston.
5. REYNOLDS, CARRIE, Lake View High School, Chicago.
6. SACHETT, CLARK HAROLD, Oberlin College.
7. THOMAS, MASON B., Wabash College.
8. WESTON, MARION D., Mt. Holyoke College.
9. WOOD, ELIZABETH M., Dorchester High School, Boston.

**3. PHYSIOLOGY**

1. HUBBARD, RALPH HUSTACE, Columbia University.
2. PATTEN, JANE BOIT, Simmons College.
3. TINKHAM, FLORENCE L., Mt. Holyoke College.
4. WIEMAN, HARRY LEWIS, University of Cincinnati.

## INVESTIGATORS

1908

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a. OCCUPYING PRIVATE ROOMS

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## 1. ZOOLOGY

- BUDINGTON, ROBERT A., Associate Professor of Zoölogy, Oberlin College.  
CHESTER, WEBSTER, Associate Professor of Biology, Colby College.  
CONKLIN, EDWIN G., Professor of Zoölogy, Princeton University.  
COOKE, ELIZABETH, University of Pennsylvania.  
CURTIS, WINTERTON C., Professor of Zoölogy, University of Missouri.  
DREW, GILMAN A., Professor of Biology, University of Maine.  
EVANS, HERBERT MCLEAN, Assistant in Anatomy, Johns Hopkins University.  
GLASER, O. C., Assistant Professor of Zoölogy, University of Michigan.  
GOLDFARB, A. J., Graduate Student, Columbia University.  
HEGNER, ROBERT W., University of Michigan.  
HOOKER, DAVENPORT, Graduate Student, Yale University.  
JORDAN, HARVEY E., Adjunct Professor of Anatomy, University of Virginia.  
KELLCOTT, WM. E., Professor of Biology, Woman's College, Baltimore, Md.  
KNOWER, H. MCE., Associate in Anatomy, Johns Hopkins University.  
LEWIS, WARREN H., Associate Professor of Anatomy, Johns Hopkins University.  
LILLIE, FRANK R., Professor of Embryology, University of Chicago.  
LOEB, LEO, Professor of Pathology, University of Pennsylvania.  
MONTGOMERY, T. H., Jr., Professor of Zoölogy, University of Pennsylvania.  
MORGAN, T. H., Professor of Experimental Zoölogy, Columbia University.  
MORRILL, CHARLES V., Lecturer in Histology and Cytology, College of Medicine, Syracuse University.  
MURBACH, LOUIS, Central High School, Detroit, Mich.  
PEARSE, ARTHUR S., Instructor in Zoölogy, University of Michigan.  
REA, PAUL M., Professor of Biology, College of Charleston and Director of the Charleston Museum.  
RIDDLE, OSCAR, Instructor in Experimental Therapeutics and Zoölogy, University of Chicago.  
SCOTT, JOHN W., Professor of Biology, Westport High School, Kansas City, Mo.  
STOCKARD, CHARLES R., Instructor in Comparative Anatomy, Cornell University Medical School.  
STRONG, OLIVER S., Instructor in Normal Histology and Embryology, College of Physicians and Surgeons, New York City.

WALLACE, LOUISE B., Instructor in Zoölogy, Mount Holyoke College.  
 WILDMAN, EDWARD E., Fellow in Zoölogy, Princeton University.  
 WILSON, E. B., Professor of Zoölogy, Columbia University.  
 WOODRUFF, L. L., Instructor in Biology, Yale University.  
 YERKES, ROBERT M., Professor of Comparative Psychology, Harvard University.

## 2. PHYSIOLOGY

KNOWLTON, FRANK P., Professor of Physiology, Syracuse University.  
 LILLIE, R. S., Instructor in Comparative Physiology, University of Pennsylvania.  
 LYON, ELIAS P., Professor of Physiology, St. Louis University Medical School.  
 MATHEWS, ALBERT P., Professor of Physiological Chemistry, University of Chicago.  
 SPAULDING, EDWARD G., Assistant Professor of Philosophy, Princeton University.  
 SHACKLEE, A. O., Instructor in Pharmacology, St. Louis University.

## 3. BOTANY

CHAMBERLAIN, C. J., Assistant Professor of Botany, University of Chicago.  
 DUGGAR, B. M., Professor of Plant Physiology, Cornell University.  
 GATES, REGINALD R., Assistant in Botany, University of Chicago.  
 LYMAN, GEORGE R., Assistant Professor of Botany, Dartmouth College.  
 MAXON, W. R., Assistant Curator, U. S. National Museum.  
 MOORE, GEORGE T., Water Mill, New York.  
 SHATTUCK, C. H., Assistant in Botany, University of Chicago.  
 THOMAS, MASON B., Professor of Botany, Wabash College.

---

## b. OCCUPYING TABLES

BARTELMIZ, GEORGE W., Laboratory Assistant, University of Chicago.  
 BECKWITH, CORA J., Instructor in Biology, Vassar College.  
 BROWN, ETHEL N., Student, Columbia University.  
 MCKIBBEN, PAUL S., Student, University of Chicago.  
 MORGULIS, SERGIUS, Student, Harvard University.  
 SPOONER, GEORGINA B., Student, Columbia University.

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# STUDENTS

---

## ZOOLOGY

1. ALTON, BENJAMIN H., South Dakota State College, Brookings, S. D.
2. CARVER, GAIL C., Mercer University, Macon, Georgia.

3. CATTELL, ELETH, Garrison-on-Hudson, New York.
4. CATTELL, MCKEEN, Garrison-on-Hudson, New York.
5. CLARK, MARY A., Mount Holyoke College.
6. DAWSON, AVA B., Teacher, Boston Public Schools.
7. EATON, ELON H., Hobart College.
8. GARDNER, JULIA A., Johns Hopkins University.
9. HALSTED, HARBECK, Western Reserve University.
10. HOWLAND, RUTH B., Syracuse University.
11. KELLY, FRANK J., University of Pennsylvania.
12. KELLY, JAMES P., Teacher, Public Schools, New York City.
13. LINTON, ELEANOR A., Smith College, Northampton, Mass.
14. MELLEN, IDA M., Brooklyn, New York.
15. MILLER, NEWTON, Clark University, Worcester, Mass.
16. NOYES, ALICE A., Mount Holyoke College.
17. RICHARDS, ESTHER L., Mount Holyoke College.
18. ROE, ADAH B., Woman's College of Baltimore.
19. SAYRE, MARY L., Woman's College of Baltimore.

### EMBRYOLOGY

1. BECKWITH, CORA J., Vassar College.
2. BULLARD, FLORENCE L., Vassar College.
3. CHIDESTER, FLOYD E., University of Chicago.
4. DAY, CLARENCE M., Wesleyan University.
5. DEAN, ROLLIN C., Wesleyan University.
6. HAYDEN, MARGARET A., Raleigh, N. C.
7. JACKSON, CLARENCE M., University of Missouri.
8. LAURENS, HENRY, College of Charleston.
9. LYON, MARY B., Mount Holyoke College.
10. MOODY, JULIA E., Mount Holyoke College.
11. RAND, CARL WHEELER, Williams College.
12. SHAW, HAROLD C., Wesleyan University.
13. SPENCER, HENRY J., Columbia University.
14. STEPHENSON, JOSEPH C., University of Chicago.
15. HEWITT, JULIA A. W., Wellesley College.

### BOTANY

1. BLAKEY, ELEANOR, University of Kansas.
2. DAVIS, FLORENCE R., Wellesley College.
3. ELTING, REBEKAH, Vassar College.
4. HEDGES, FLORENCE, Bureau of Plant Industry, U. S. Department of Agriculture.
5. ILLICK, JOSEPH, Pennsylvania State School of Forestry.
6. KENNEDY, MARY E., Mount Holyoke College.
7. MOODY, REBECCA E., University of Kansas.

8. PALLISER, HELEN L., Barnard College.
9. SCHAFHEITLIN, GERTRUDE, McGill University.
10. SCHRAMM, JACOB R., Wabash College.
11. TAYLOR, ARTHUR W., Dartmouth College.

### PHYSIOLOGY

1. THAYER, LUCY C., Teacher, High School, Medfield, Mass.
2. MACKENZIE, MARY D., Western College for Women, Oxford, Ohio.
3. ULLMANN, HENRY J., University of Chicago.



## 5. TABULAR VIEW OF ATTENDANCE

### 1907

INVESTIGATORS—Total .....	60
Occupying Rooms	
Zoölogy .....	32
Physiology .....	8
Botany .....	10
Occupying Tables	
Zoölogy .....	9
Physiology .....	1
Botany .....	—
STUDENTS—Total .....	47
Course in Zoölogy .....	34
Course in Physiology .....	4
Course in Botany .....	9
UNIVERSITIES AND COLLEGES REPRESENTED .....	47
By investigators .....	26
By students .....	21
SCHOOLS AND ACADEMIES REPRESENTED .....	13
By investigators .....	4
By students .....	9

### 1908

INVESTIGATORS—Total .....	52
Occupying Rooms	
Zoölogy .....	32
Physiology .....	6
Botany .....	8
Occupying Tables	
Zoölogy .....	6
STUDENTS—Total .....	48
Zoölogy .....	19
Embryology .....	15
Physiology .....	3
Botany .....	11

UNIVERSITIES AND COLLEGES REPRESENTED .....	51
By investigators .....	25
By students .....	26
SCHOOLS REPRESENTED .....	5
By investigators .....	2
By students .....	3

## 6. RESEARCH SEMINAR AND EVENING LECTURES, 1907-1908

### RESEARCH SEMINAR

1907

A. P. MATHEWS.....	"Spontaneous Respiration of the Sugars" .....	July 9
MAX MORSE .....	"Reactions of the Meal Worm"...	July 9
A. J. GOLDFARB .....	"Study of the Effects of Lecithin on Growth" .....	July 16
GILMAN A. DREW ....	"The Rate of Egg Production by Domestic Fowls," .....	July 16
A. J. CARLSON .....	"Some Points in the Secretion of Saliva in Mammals" .....	July 23
C. M. CHILD .....	"Amitosis as a Factor in Normal and Regulatory Growth" .....	July 30
O. C. GLASER .....	"A Rapid Method of Demonstrating Habit Formation" .....	July 30
J. B. TINGLE .....	"E. Fischer's More Recent Work on Proteids" .....	August 6

### EVENING LECTURES

1907

WM. LORD SMITH ....	"Tiger Lands" .....	July 12
E. G. CONKLIN .....	"Micro-Photography by Ultra-Violet Light" .....	July 19
C. M. CHILD .....	"Some Consideration on the Physiology of Form-Regulation"...	July 26
FREDERICK V. COVILLE.	"A New Branch of Applied Botany" .....	August 2
W. B. SCOTT .....	"Observations in South Africa"...	August 7
A. G. MAYER .....	"The Role of Magnesium in the Control of Rhythmical Pulsation" .....	August 9
WM. BATESON .....	Demonstrations of Mendelian Inheritance .....	August 12

- WM. BATESON ..... "More Complex Phenomena and  
Morbidity Inheritance in Man" .. August 13
- E. B. WILSON ..... Demonstrations with lantern slides  
of photographs of chromo-  
somes ..... August 15
- A. A. W. HUBRECHT.. "Phylogeny of the Allantois" .... August 16

## RESEARCH SEMINAR

1908

- A. P. MATHEWS ..... "The Spontaneous Oxidation of  
Some Cell Constituents" ..... July 8
- C. R. STOCKARD ..... "Studies on the Rate of Regenera-  
tive Growth" ..... July 15
- LEO LOEB ..... "Experimental Production of De-  
cidua" ..... July 22
- A. S. PEARSE ..... "Reactions of Amphibians to  
Light" ..... July 29
- W. C. CURTIS ..... "Artificial Propagation of Fresh  
Water Mussels" ..... August 5

## SEMINAR IN PHYSIOLOGY

1908

- E. B. WILSON ..... "Inheritance of Sex" ..... July 7
- E. G. CONKLIN ..... "Organization of the Egg" ..... July 9
- R. R. GATES ..... "Chromosomes in *Oenothera*" .... July 11
- T. H. MORGAN ..... "Mendelian Inheritance" ..... July 14
- A. P. MATHEWS ..... "Inheritance from the Physiolog-  
ical Standpoint" ..... July 16
- E. G. SPAULDING .... "Is the Organism a Mechanism?" .. July 18
- A. P. MATHEWS ..... "The Chemistry of Fertilization" .. July 21
- R. S. LILLIE ..... "Irritability" ..... July 23
- R. S. LILLIE ..... "Contractility" ..... July 25
- A. P. MATHEWS ..... "Chemistry of Respiration" ..... July 28
- J. R. MURLIN ..... "Proteid Metabolism of Develop-  
ment" ..... July 30
- J. R. MURLIN ..... "General Metabolism of Develop-  
ment" ..... July 31
- E. P. LYON ..... "Tropisms" ..... August 1
- S. O. MAST ..... "Reactions to Light" ..... August 4

- E. G. SPAULDING .... "Postulates and Results in Treating  
the Problem of Behavior".....August 6  
G. H. PARKER ..... "Evolution of the Nervous Sys-  
tem" .....August 8  
E. B. MEIGS ..... "Theory of Muscular Contractility" August 10  
E. G. SPAULDING ..... "Biology and Pragmatism" .....August 11

## EVENING LECTURES

1908

- ULRIC DAHLGREN .... "The Electric Fishes" .....July 3  
FRANK M. CHAPMAN. "The Pelicans of America" .....July 10  
ABBOTT H. THAYER... "Demonstration of Protective Col-  
oration" .....July 10  
G. H. PARKER..... "The Origin of Vertebrate Eyes" .July 24  
THEOBALD SMITH .... "The Transmission of Immunity  
from Mother to Offspring" ...July 28  
M. J. GREENMAN .... "A Sketch of the Wistar Institute  
and its Work" .....July 31  
A. G. MAYER ..... "Effects of Chemicals upon Pulsa-  
tion" .....August 7

## 7. MEETING OF THE SEVENTH INTERNATIONAL ZOOLOGICAL CONGRESS AT WOODS HOLE

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The Seventh International Zoölogical Congress visited the laboratories of the Marine Biological Laboratory and of the U. S. Bureau of Fisheries, at Woods Hole, August 25, 1907 (see page 22). The signatures to the following message to the director of the Naples Zoölogical Station constitute a nearly complete roster of the attendance on this occasion:

*Dear Dr. Dohrn:*

Members of the International Zoölogical Congress, and the Marine Biological Laboratory and the United States Fish Commission Station, all join in expressing their keen regret for your absence at the meetings of the Congress, in Boston, and at Woods Hole, and the earnest hope that your health and strength may be speedily recovered, and yet many years be added to those you have already given to science and to the development of marine stations.

The message was signed by the following:

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C. O. WHITMAN, Chicago.

FRANK R. LILLIE, Chicago.

G. KOSHEWNIKOV, Moscow.

RALPH S. LILLIE, Philadelphia.

W. L. TOWER, Chicago.

R. R. GATES, Chicago.

CHARLES ZELNY, Bloomington, Ind.

MR. AND MRS. RICHARD HERTWIG, Munich.

O. MAAS, Munich.

L. W. VAN WIJHE.

EDW. G. GARDINER, Boston.

MAX LÜHE.

CHAS. P. SINGERFOOS, Minneapolis.

A. J. GOLDFARB, Columbia University.

KRISTINE BONNEVIE, Christiania.

MARY C. DICKERSON.

O. ZUR STRASSEN, Leipzig.

DR. AND MRS. CH. WARDELL STILES.

G. SEVERIN, Brussels.

EDITH M. PATCH.

HENRY F. NACHTRIEB, Minneapolis.

G. PIGROZZI, Bologna.

P. REVILLOID, Geneva.

W. H. LEWIS, Baltimore.

O. S. STRONG, Columbia University.

SUSANNA PHELPS GAGE, Ithaca, N. Y.

AGNES L. BAMBERG, Columbia University.

T. KIMURA, Columbia University.

SIMON HENRY GAGE, Cornell University.

CHAS. W. HARGITT, Syracuse University.

THEOBALD SMITH, Harvard University.

CHARLES F. ROUSSELET, London.

CÉCILE ROUSSELET, London.

B. H. RANSOM, Washington, D. C.

VIRGINIA RANSOM, Washington, D. C.

MRAZEK, Prague.

PROFESSOR R. BLANCHARD, Paris.

THOMAS G. LEE, Minneapolis.

DR. G. LOISEL, Paris.

MME. G. LOISEL, Paris.

EMILE YOUNG, Geneva.

D. O. FUHRMANN, Neuchatel.

DR. G. HORVATH, Budapest.

CH. GRAVIER, Paris.

MARIE LOYEZ, Paris.

BARON DUBRETON, Paris.

MARIE GHIGI, Bologna.

GEORGE GHIGI, Bologna.

HELEN V. TYRODE, Boston.

MARASSOVICH, Russia.

GOETTE, Strassburg, i E.

v. HAECKER, Stuttgart.

MARIAN H. MULBERGER, Stuttgart.

DR. W. BERGMANN, Wiesbaden.

FILIPPO CAVAZZA, Bologna.

H. SCHAUINSLAND.

C. H. TURNER, Augusta, Ga.

E. P. MERIAN, Basel.

J. BÜTTIKOFER, Rotterdam.

PROFESSOR D. STEPHEN APATHY, Kolozsmr, Hungary.

PROFESSOR W. TH. STUDER, Bern.

PROFESSOR D. EMIL. A. GOELDI, Bern.

L. MURBACH, Detroit.

DR. CH. LINDER, St. Tuner, Switzerland.

C. M. CLAPP, Mt. Holyoke College, South Hadley, Mass.

A. LAWRENCE ROTCH, Boston.

JAS. W. UNDERWOOD, Olivet, Mich.

A. BORGERT, Bonn.

R. HEYMONS, Berlin.

RHUMBLER.

DR. W. BLASIUS, Braunschweig.

C. ZIMMER, Breslau.

BYRON HORTON, Columbia University.

WILLIAMS B. HERMS.

A. V. RICHTER, Berlin.

E. M. WALLACE, Mt. Holyoke College, South Hadley, Mass.

EMMA LONGFELLOW, Mt. Holyoke College.

SERGIUS MORGULIS, Ohio State University.

N. J. KUSNEZOV, Acad. Sci. St. Petersburg.

S. METALNIKOFF, Russia.

J. VERSLUYS, JR., Amsterdam.

J. ARTHUR THOMSON, Aberdeen.

LORANDE LOSS WOODRUFF, Williamstown.

S. WATASE, Tokio, Japan.

HERBERT OSBORN, Columbus, Ohio.

BERNARD HOBSON, Manchester, England.

ROBERT A. BUDINGTON, Oberlin.

WALTER B. CANNON, Harvard Medical School, Boston.

CORNELIA JANE CANNON.

GEORGE G. SCOTT, New York.

EDWIN G. CONKLIN, Philadelphia.

THOMAS HUNT MORGAN, New York.

LILIAN V. MORGAN, New York.

THEO. D. A. COCKERELL, University of Colorado.

WILMATTE PORTER COCKERELL, Boulder, Col.

ROSWELL HILL JOHNSON, Station for Experimental Evolution.



HELEN JAMES, St. Paul.

ROSS G. HARRISON, New Haven.

F. F. GUDERNATSCH, Czernowitz.

WM. PATTEN, Dartmouth College, Hanover, N. H.

DR. V. NEDRIGOILLOW, Russia.

PROFESSOR A. MAXIMOW, St. Petersburg.

DR. W. DANTCHAKOFF, St. Petersburg.

DR. N. SAMSSONOW, Russia.

DR. WLADIMIROFF, St. Petersburg.

PROFESSOR DR. EUGENE GOLOVINE.

K. DERJUGIN, St. Petersburg.

EDITH S. HOYLE, Manchester.

WM. E. HOYLE, Manchester.

## 8. MEMBERS OF THE CORPORATION OF THE MARINE BIOLOGICAL LABORATORY

---

### I. LIFE MEMBERS

- ALLIS, Mr. EDWARD PHELPS, Jr., Palais Carnoles, Menton, France.  
ANDREWS, Mrs. GWENDOLEN FOULKE, 821 St. Paul St., Baltimore, Md.  
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KIDDER, Mr. NATHANIEL T., Milton, Mass.  
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- LEE, Mrs. FREDERICK S., 279 Madison Avenue, New York City.
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- MORGAN, Mrs. T. H., New York City.
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- OSBORN, Prof. HENRY F., American Museum of Natural History, New York City.
- PELL, Mr. ALFRED, Highland Falls, Orange County, N. J.
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WILSON, Prof. W. P., Philadelphia Museum, Philadelphia, Pa.

## 2. MEMBERS 1908

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DORRANCE, FRANCES, Dorranceton, Pa.  
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LILLIE, F. R., University of Chicago, Chicago, Ill.  
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LOEB, LEO, University of Pennsylvania, Philadelphia, Pa.  
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MORGAN, T. H., Columbia University, New York City.  
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MORRILL, CHARLES V., College of Medicine, Syracuse University.  
MORSE, MAX, College of the City of New York.

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TENNENT, D. H., Bryn Mawr College, Pa.  
TERRY, O. P., Indiana Medical School, W. Lafayette, Ind.

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- WOODRUFF, L. L., Yale University, New Haven, Conn.
- WRIGHT, R. RAMSAY, University of Toronto, Canada.
- YERKES, ROBERT M., Harvard University, Cambridge, Mass.



## 9. PUBLICATIONS FROM THE MARINE BIOLOGICAL LABORATORY

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The following list comprising some 860 titles is a compilation of publications representing the activities of the Laboratory in the line of research from its foundation to the end of the year 1907. While the attempt has been to make the list exhaustive, it is not believed that this result has been attained, because there had been no systematic effort since 1895 to keep account of the publications. The present list includes the list of 1895 published in the eighth annual report, the titles of addresses published in the volumes of lectures delivered at the Laboratory, and the results of a circular letter sent to those who have conducted investigations at the Laboratory from the beginning. The greater number of titles were secured in replies to this circular letter, and the list is therefore official in the sense that it is made up of titles furnished by the investigators themselves. Titles indicated by the letter B are of publications of which only a minor part of the research was accomplished in the Marine Biological Laboratory. A copy of the circular letter referred to above follows:

"I shall consider it a great favor if you will send me a list of your publications which have been based, even in part, on work done at the Marine Biological Laboratory. Will you kindly indicate by the letter *A* publications which have been based on material collected in the main at the Marine Biological Laboratory, and by *B* publications which were not based on such material, but in which part at least of the study was accomplished while a member of the Marine Biological Laboratory. The value of this compilation will depend largely on its completeness.

"Your compliance with this request will be of great service to the Marine Biological Laboratory and its management. Thanking you, I am

"Respectfully yours,

"*Assistant Director, Marine Biological Laboratory.*"

- ALLABACH, LULU F. Some Points Regarding the Behavior of *Metridium*. Biol. Bull., X, 1906.
- ALLEN, BENNET M. The Topography of Organs in Typical Segments of *Hirudo*. Biol. Bull., III, pp. 161-164, 1902.
- ANDREWS, GWENDOLEN F. The Living Substance as Such and as Organism. Journ. Morph., XII, Suppl., p. 176, 1897.
- ATKINSON, G. F. The Transformation of the Sporophyllary to Vegetative Organs. Biol. Lectures, 1895.
- AYERS, HOWARD. Contribution to the Morphology of the Vertebrate Head. Zool. Anz., 1890.
- On the Origin of the Internal Ear and the Functions of the Semi-circular Canals and Cochlea. Published by the author, 1890.
- Concerning Vertebrate Cephalogenesis. Journ. Morph., IV, 1890.
- The Ear of Man: its Past, its Present, and its Future. Biol. Lectures, Marine Biol. Laboratory, 1890.
- Die Membrana Tectoria, etc., und die Membrana Basilaris, etc. Anat. Anz., VI, 1891.
- Contribution to the Morphology of the Vertebrate Ear. Journ. Morph., VI, 1892.
- The Macula Neglecta again. Anat. Anz., VIII, 1893.
- Some Nerve Muscle Experiments. Journ. Morph., VIII, 1893.
- Ueber das Peripherische Verhalten der Gehörnerven u. d. Wert d. Haarzellen d. Gehörorganes. Anat. Anz., VIII, 1893.
- The Auditory or Hair Cells of the Ear, and their Relations to the Auditory Nerve. Journ. Morph., VIII, 1893.
- B. Morphology of the Cat; or the M. Flexor Accessorius of the Human and Feline Foot. Science, Sept., 1893.
- B. *Bdellostoma dombeyi*: Study from the Hopkins Marine Laboratory. Biol. Lectures, Woods Hole, Mass., 1893.
- The Origin and Growth of Brain Cells in the Adult Body. Journ. Comp. Neur., VI, 1896.
- B. Methods of Study of the *Myxamœbæ* and Plasmodia of the Mycetozoa. Journ. App. Micros., I, 1897.
- B. On the Membrana Basilaris, the Membrana Tectoria, and the Nerve Endings in the Human Ear. Zool. Bull., I, 1897.
- B. Contribution to our Knowledge of the Structure of the Organ of Corti in Man. Scientific Assoc. of the University of Missouri, Jan., 1898.
- B. Anatomy of the Myxinoids. I, The Skeleton. Ayers and Jackson. Journ. Morph., 1901, and Bulletin of Univ. of Cincinnati, I.

- BARDEEN, C. R. On the Physiology of *Planaria maculata* with Special Reference to the Phenomena of Regeneration. Amer. Journ. Phys., V, 1901.
- Essential Factors in the Regeneration of *Planaria maculata*. Biol. Bull., II, 1901.
- The Function of the Brain in *Planaria maculata*. Amer. Journ. Phys., V, 1901.
- Embryonic and Regenerative Development in Planarians. Biol. Bull., III, 1902.
- Factors in Heteromorphosis in Planarians. Arch. Entw 'mech., XVI, 1903.
- BAUMGARTNER, W. J. B. Some New Evidences for the Individuality of the Chromosomes. Biol. Bull., VIII, 1904.
- BAUR, G. The Differentiation of Species on the Galapagos Islands and the Origin of the Group. Biol. Lec., Woods Hole, Mass., 1894.
- BERRY, EVIS H. B. The Accessory Chromosome in *Epeira*. Biol. Bull., XI, 1906.
- BENSLEY, R. R. The Œsophageal Glands of Urodela. Biol. Bull., II, 1900.
- BICKFORD, ELIZABETH E. Notes on Regeneration and Heteromorphosis of Tubularian Hydroids. Journ. Morph., IX, 1894.
- BIGELOW, MAURICE A. Notes on the First Cleavage of *Lepas*. Zool. Bull., II, 1899.
- B. The Early Development of *Lepas*. A Study of Cell-Lineage and Germ-Layers. Bull. Mus. Comp. Zool., Harvard, XL, 1902.
- B. Teaching Zoology in Secondary Schools, New York, 1904.
- BIGELOW, R. P. B. Report upon the Crustacea of the Order Stomatopoda Collected by the Steamer Albatross between 1885 and 1891, and on Other Specimens in the United States National Museum. Proc. U. S. Nat. Mus., XVII, 1894.
- B. The Anatomy and Development of *Cassiopea Xamachana*. Mem. Bos. Soc. Nat. Hist., V, 1900.
- BONNEVIE, KRISTINE. Heterotypical Mitosis in *Nereis limbata* (Ehlers). Biol. Bull., XIII, pp. 57-83, 1907.
- BORING, ALICE M. Closure of Longitudinally Split Tubularian Stems. Biol. Bull., VII, pp. 154-159, 1904.
- BRANNON, M. A. The Structure and Development of *Grinellia Americana*, Ann. of Bot., XI, p. 1, 1897.
- BRISTOL, CHARLES L. The Metamerism of *Nephelis*. A Contribution to the Morphology of the Nervous System, together with a Description of *Nephelis lateralis*. Journ. Morph., XV, 1898.

- BROWN, O. H. The Immunity of *Fundulus* Eggs and Embryos to Electrical Stimulation. *Amer. Journ. Phys.*, IX, 1903.  
 The Permeability of the Membrane of the Egg of *Fundulus heteroclitus*. *Amer. Journ. Phys.*, XIV, 1905.  
 A Pharmacological Study of Anesthetics and Narcotics. *Amer. Journ. Phys.*, XV, 1905.  
 B. The Comparative Toxicity for *Paramœcia* of the Salts of Strychnine, of Morphine, and of Quinine. Preliminary Report. *Amer. Journ. Phys.*, XV, 1906.  
 The Influence of Organ Extracts of Cold-Blooded Animals on the Blood-Pressure of Dogs. *Journ. of Phys.*, XXXIV, 1906.  
 B. Difference in Physiological Action of the Salts of an Alkaloid. *Journ. Amer. Med. Assoc.*, XLVIII, 1907.
- BRUES, C. T. A Dexiid Parasite of the Sowbug. *Entomol. News*, p. 291, 1903.  
 B. A Monograph of the North American Phoridae. *Trans. Amer. Entom. Soc.*, XXIX, p. 331, 1903.
- BRUES, C. T., and MELANDER, A. L. Guests and Parasites of the Burrowing Bee *Halictus*. *Biol. Bull.*, V, p. 1, 1903.
- BUMPUS, H. C. The Embryology of the American Lobster. *Journ. Morph.*, V, 1891.  
 A New Method in the Use of Celloidin. *Amer. Nat.*, 1892.  
 A Laboratory Course in Invertebrate Zoölogy, 1892.  
 The Variations and Mutations of the Introduced *Littorina*. *Zool. Bull.*, I, pp. 247-259, 1898.
- BUNTING, MARTHA. The Origin of the Sex-Cells in *Hydractinia* and *Podocoryne* and the Development of *Hydractinia*. *Journ. Morph.*, IX, pp. 203-236, 1894.
- BUNZEL, H. H. Rate of Oxidation of Sugars in an Acid Medium. *Amer. Journ. Phys.*, XXI, p. 23, 1908.
- BYRNES, ESTHER F. Experimental Studies on the Development of Limb Muscles in Amphibia. *Journ. Morph.*, XIV, 1898.  
 On the Regeneration of Limbs in Frogs after the Extirpation of Limb-Rudiments. *Anat. Anz.*, XV, 1898.
- CALKINS, GARY N. The Spermatogenesis of *Lumbricus*. *Journ. Morph.*, XI, 1892.  
 Nuclear Division in Protozoa. *Biol. Lectures*, 1899.
- CAMPBELL, D. H. The Evolution of the Sporophyte in the Higher Plants.
- CARLSON, A. J. The Nervous Origin of the Heart Beat in *Limulus*, and the Nervous Nature of Co-ordination or Conduction in the Heart. *Am. Journ. Phys.*, XII, pp. 67-74, 1904.

- The Nature of the Action of Drugs on the Heart. *Science*, XX, pp. 684-689, 1904.
- Further Evidence of the Nervous Origin of the Heart Beat in Limulus. *Am. Journ. Phys.*, XII, pp. 471-498, 1905.
- The Innervation of the Invertebrate Heart. *Biol. Bull.*, VIII, pp. 123-159, 1905.
- The Nature of Cardiac Inhibition. *Am. Journ. Phys.*, XIII, pp. 217-240, 1905.
- The Function of the Cardiac Nerves in Molluscs. *Am. Journ. Phys.*, XIII, pp. 396-426, XIV, pp. 16-53, 1905.
- Temperature and Heart Activity, with Special Reference to the Heat Standstill of the Heart. *Am. Journ. Phys.*, XVI, pp. 207-234, 1906.
- The Direct Relation Between the Rate of Conduction in Nerves and the Rapidity of Contraction in Muscles. *Am. Journ. Phys.*, XVI, pp. 136-143, 1906.
- On the Action of Chloral Hydrate on the Heart. *Am. Journ. Phys.*, XVII, pp. 1-8, 1906.
- The Point of Action of Drugs on the Heart. *Am. Journ. Phys.*, XVII, pp. 177-210, 1907.
- The Cause of the Cessation of Automatic Tissues in Isotonic Solutions of Non-Electrolytes. *Am. Journ. Phys.*, XVI, pp. 221-229, 1906.
- Comparative Physiology of the Invertebrate Heart. Parts V-VIII. *Am. Journ. Phys.*, XVI, pp. 47-110, 1906.
- Osmotic Pressure and Heart Activity. *Am. Journ. Phys.*, XVI, pp. 357-373, 1906.
- The Chemical Conditions for Heart Activity. *Am. Journ. Phys.*, XVI, pp. 378-408, 1906.
- The Physiology of the Cardiac Nerves in Arthropoda. *Am. Journ. Phys.*, XV, pp. 127-135, 1906.
- The Mechanism of Coördination and Conduction in the Heart. *Am. Journ. Phys.*, XV, pp. 99-127, 1906.
- The Mechanism of the Refractory Period in the Heart. *Am. Journ. Phys.*, XVIII, pp. 71-88, 1907.
- The Action of Cyanides on the Heart. *Am. Journ. Phys.*, XIX, pp. 223-233, 1907.
- The Nature of the Inhibition of the Heart on Direct Stimulation with the Tetanizing Current. *Zeitschr. Phys.*, VI, 1907.
- The Mechanism of the Stimulating Action of Tension on the Heart. *Am. Journ. Phys.*, XVIII, pp. 49-155, 1907.
- The Conductivity Produced in the Non-Conducting Myocardium

- of *Limulus* by Isotonic Radium Chloride. *Am. Journ. Phys.*, XXI, pp. 11-18, 1908.
- The Refractory State of the Non-Automatic Heart Muscles of *Limulus*. *Am. Journ. Phys.*, XXI, pp. 19-23, 1908.
- CARLSON, A. J., and MEEK, W. J. The Mechanism of the Embryonic Heart Rhythm in *Limulus*. *Am. Journ. Phys.*, XXI, pp. 1-10, 1908.
- CASTEEL, D. B. The Cell-Lineage and Early Larval Development of *Fiona marina*, a Nudibranchiate Mollusc. *Proc. Acad. Nat. Sci., Phila.*, pp. 325-405, 1904.
- CHESTER, G. D. Notes Concerning the Development of *Nemalion Multifidum*. *Bot. Gaz.*, XXI, p. 340, 1896.
- CHILD, C. M. The Early Development of *Arenicola* and *Sternaspis*. *Arch. Entw'mech.*, IX, 1900.
- The Significance of the Spiral Type of Cleavage and its Relation to the Process of Differentiation. *Biol. Lectures*, 1899.
- CHRYSLER, M. A. Anatomical Notes on Certain Strand Plants. *Bot. Gaz.*, XXXVII, pp. 461-464, 1904.
- Reforestation at Woods Hole, Mass. A Study in Succession, *Rhodora*, VII, pp. 121-129, 1905.
- CHRYSLER, M. A., and COULTER, J. M. B. Regeneration in *Zamia*. *Bot. Gaz.*, XXXIX, pp. 452-458, 1904.
- CLAPP, C. M. Some Points in the Development of the Toad-fish (*Batrachus tau*). *Journ. Morph.*, V, pp. 494-502, 1891.
- Relation of the Axis of the Embryo to the First Cleavage Plane. *Biol. Lectures*, 1898.
- The Lateral Line System of *Batrachus tau*. *Journ. Morph.*, XV, 1898.
- CLARK, GAYLORD P. On the Relation of the Otocysts to Equilibrium Phenomena in *Galasimus Pugilator*, etc. *Journ. Phys.*, XIX, p. 327, 1896.
- CLAYPOLE, AGNES M. The Embryology and Oögenesis of *Anurida maritima*. *Journ. Morph.*, XIV, 1898.
- COE, WESLEY R. Times of Breeding of Some Common New England Nemerteans. *Science*, IX, 1899.
- Early Development of *Cerebratulus*. *Science*, IX, 1899.
- Development of the *Pilidium* of Certain Nemerteans. *Trans. Conn. Acad. Sci.*, X, 1899.
- Nemertean Parasites of Crabs. *Am. Nat.*, XXXVI, 1902.
- The Genus *Carcinomertes*. *Zool. Anz.*, XXV, 1902.
- COLE, LEON J. Notes on the Habits of Pycnogonids. *Biol. Bull.*, II, 1901.

- CONKLIN, E. G. Fertilization of the Ovum. Biol. Lectures, 1893.  
Cell Size and Body Size. Science, Jan. 10, 1896.  
Discussion of the Factors of Evolution from the Standpoint of Embryology. Proc. Am. Phil. Soc., XXXV.  
The Embryology of Crepidula. Journ. Morph., XIII, 1897.  
The Asters in Fertilization and Cleavage. Science, March, 1898.  
Environmental and Sexual Dimorphism in Crepidula. Proc. Acad. Nat. Sci., Philadelphia, 1898.  
The Fertilization of the Egg and Early Differentiation of the Embryo. Univ. Med. Magazine, March, 1900.  
Centrosomes and Spheres in the Maturation, Fertilization and Cleavage of Crepidula. Anat. Anz., XIX, 1901.  
The Individuality of the Germ Nuclei during the Cleavage of the Egg of Crepidula. Biol. Bull., II, 1901.  
The Embryology of a Brachiopod, Terebratulina septentrionalis. Proc. Am. Phil. Soc., 1902.  
Karyokinesis and Cytokinesis in the Maturation, Fertilization and Cleavage of Crepidula and other Gasteropoda. Journ. Acad. Nat. Sci., Philadelphia, XII, 1902.  
The Earliest Differentiations of the Egg. Science, May, 1903.  
The Cause of Inverse Symmetry. Anat. Anz., XXIII, 1903.  
Amitosis in the Egg-Follicle Cells of the Cricket. Am. Nat., October, 1903.  
Organ Forming Germ Regions in the Eggs of Ascidians and Snails. Am. Nat., 1904.  
Experiments on the Origin of the Cleavage Centrosomes. Biol. Bull., VII, 1904.  
The Early Embryology of Chordates in the Light of the Development of Ascidians. Science, Feb., 1905.  
Organ-forming Substances in the Eggs of Ascidians. Biol. Bull., VIII, 1905.  
The Organization and Cell-Lineage of the Ascidian Egg. Journ. Acad. Nat. Sci., Phila., XIII, 1905.  
Mosaic Development in Ascidian Eggs. Journ. Exp. Zool., II, 1905.  
Does Half an Ascidian Egg Give Rise to a Whole Larva? Arch. Entw'mech., XXI, 1906.  
Sex Differentiation in Dinophilus. Science, Sept., 1906.  
The Embryology of Fulgur: A Study of the Influence of Yolk on Development. Proc. Acad. Nat. Sci., Philadelphia, 1907.  
COUNCILMAN, W. T. Studies on the Pathology of the Kidney. Journ. Am. Med. Assoc., XLVI, 1906.

- CRAIG, WALLACE. *B.* The Voices of Pigeons Regarded as a Means of Social Control. *Amer. Journ. Sociology*, July, 1908.
- CRAMPTON, H. E. Experimental Studies on Gasteropod Development. *Arch. Entw'mech.*, III, 1896.
- The Ascidian Half-Embryo. *Ann. N. Y. Acad. Sci.*, X, 1897.
- Coalescence Experiments upon the Lepidoptera. *Biol. Lectures*, 1897.
- Studies on the Early History of the Ascidian Egg. *Journ. Morph.*, XV, Suppl., 1899.
- An Experimental Study upon Lepidoptera. *Arch. Entw'mech.* IX, 1899.
- The Aims of Quantitative Study of Variations. *Biol. Lectures*, 1899.
- CURTIS, W. C. *B.* On the Reproductive Organs of *Planaria simplicissima*, a New Species. *Zoöl. Jahrb.*, XXX, 1900.
- On the anatomy and Development of the Reproductive Organs of *Planaria maculata*. *J. H. U. Circ.*, XIX, 1900.
- The Life History, the Normal Fission, and the Reproductive Organs of *Planaria maculata*. *Proc. Boston Soc. Nat. Hist.*, Nov., 1902.
- Crossobothrium Laciniatum* and Developmental Stimuli in the Cestoda. *Biol. Bull.*, V, 1903.
- The Location of the Permanent Pharynx in the Planarian Embryo. *Zoöl. Anz.*, XXIX, 1905.
- The Formation of Proglottids in *Crossobothrium Laciniatum* (Linton). *Biol. Bull.*, XI, 1906.
- DAHLGREN, ULRIC. *B.* A Centrosome Artifact in the Nerve Cells of the Dog. *Anat. Anz.*, 1896.
- The Giant Ganglion Cells in the Order Heterosomata of Fishes. *Anat. Anz.*, 1897.
- The Giant Ganglion Cells in the Spinal Cord Pterophryne. *Journ. Neur.*, 1898.
- The Maxillary and Mandibular Breathing Valves of Fishes. *Biol. Bull.*, 1899.
- A Double Method of Embedding in Paraffin and Celloidin. *Journ. Micros.*, Rochester, 1899.
- DAVIS, B. M. The Spore-mother Cell of *Anthoceros*. *Bot. Gaz.*, XXVIII, p. 89, 1898.
- The Fertilization of *Albugo candida*. *Bot. Gaz.*, XXIX, p. 297, 1900.
- B.* Nuclear Studies on *Pellia*. *Ann. Bot.*, XV, p. 147, 1901.



- B.* The Origin of Sex in Plants. Popular Science Monthly, Nov., 1901.
- Development of the Frond of *Champia parvula*, Harv. from the Carpospore. Ann. Bot., VI, p. 339, 1892.
- B.* The Evolution of Sex in Plants. Popular Science Monthly, Feb., 1903.
- Oögenesis in *Saprolegnia*. Bot. Gaz., XXXV, p. 233, 1903.
- B.* Origin of the Archegonium. Ann Bot., XVII, p. 477, 1903.
- B.* The Origin of the Sporophyte. Am. Nat., XXXVII, p. 411, 1903.
- Oögenesis in *Vaucheria*. Bot. Gaz., XXXVIII, p. 81, 1904.
- B.* The Relationships of Sexual Organs in Plants. Bot. Gaz., XXXVIII, p. 241, 1904.
- B.* Studies on the Plant Cell. Am. Nat., XXXVIII and XXXIX, 1904-05.
- The Botanical Portion of the Biological Survey of the Waters of Woods Hole and Vicinity. Bulletin of the U. S. Bureau of Fisheries.
- DAVIS, D. J., and REUDIGER, G. F. Phagocytosis and Opsonins in the Lower Animals. Journ. Infec. Dis., IV, p. 333, 1907.
- B.* Hemophilic Bacilli: Their Morphology and Relation to Respiratory Pigments. Journ. Infec. Dis., IV, p. 73, 1907.
- DEAN, BASHFORD. The Marine Biological Stations of Europe. Biol. Lectures, 1893.
- DERRICK, C. M. Notes on the Holdfasts of Certain Florideæ. Bot. Gaz., XXVIII, p. 246, 1899.
- DIMON, ABIGAIL C. A Quantitative Study of the Effect of Environment upon the Forms of *Nassa obsoleta* and *Nassa trivittata* from Cold Spring Harbor, L. I. Biometrika, II, pp. 24-43, 1902.
- DOLBEAR, A. E. Life from a Physical Standpoint. Biol. Lec., Woods Hole, Mass., 1894.
- Explanations or How Phenomena are Interpreted. Biol. Lectures, IV, 1895.
- Known Relations between Mind and Matter. Biol. Lectures, IV, 1895.
- DONALDSON, HENRY H. *B.* Observations on the Weight and Length of the Central Nervous System, and of the Legs in Bullfrogs of Different Sizes. Journ. Comp. Neur., VIII, 1898.
- DOWNING, E. R. Variation in the Position of the Adductor Muscles of *Anadonta grandis*, Say. Am. Nat., XXXVI, 1902.
- The Spermatogenesis of *Hydra*. Zööl. Jahrb. Abt. Anat. u. Ont., XXI, 1905.

- The Ovogenesis of *Hydra fusca*. Biol. Bull., XV, 1908.
- DREW, GILMAN A. B. The Life History of *Nucula delphinodonta* (Mighels). Q. J. M. S., XLIV, 1901.
- B. The Habits, Anatomy, and Embryology of the Giant Scallop (*Pecten tenuicostatus*, Mighels). Univ. of Maine Studies, 6, 1906.
- The Habits and Movements of the Razor-Shell Clam, *Ensis directus*, Con. Biol. Bull., XII, 1907.
- B. The Circulatory and Nervous Systems of the Giant Scallop. *Pecten tenuicostatus*, Mighels, with Remarks on the Possible Ancestry of the Lamellibranchs, and a Method of Making Series of Anatomical Drawings. Biol. Bull., XII, 1907.
- The Physiology of the Nervous System of the Razor-Shell Clam, *Ensis directus*, Con. Journ. Exp. Zool., V, 1908.
- ECKEL, LIDA S. The Resin-Gnat Diplosis and Three of its Parasites. Entomol. News, pp. 279-284, 1903.
- EIGENMANN, C. H. B. On the Precocious Segregation of the Sex Cells in *Micrometus aggregatus* Gibbons. Journ. Morph., V, pp. 480-492, 1891.
- Sex Differentiation in the Viviparous Teleost *Cymatogaster*. Arch. Entw'mech., IV, pp. 125-179, 1896.
- EIGENMANN, C. H., and DEMIG, W. A. The Eyes of the Blind Vertebrates of North America. III. The Structure and Ontogenic Degeneration of the Eyes of the Missouri Cave Salamanders. Biol. Bull., II, pp. 33-40, 1900.
- ENTEMANN, W. M. Coloration in *Polistes*. Carnegie Inst. of Wash., p. 88, Nov., 1904.
- Some Observations on the Behavior of Social Wasps. Pop. Sci. Monthly, August, 1902.
- EVANS, ALEXANDER M. B. Notes on New England Hepaticæ. Rhodora, IV, 1902.
- B. Preliminary Lists of New England Plants, XI, Hepaticæ. Rhodora, V, 1903.
- B. Notes on New England Hepaticæ. II. Rhodora, VI, 1904.
- EYCLESYMER, A. C. B. Paraphysis and Epiphysis in *Amblystoma*. Anat. Anz., VII, pp. 215-217, 1892.
- B. The Cleavage of the Amphibian Ovum. (With E. O. Jordan.) Anat. Anz., VII, pp. 622-624, 1892.
- B. The Development of the Optic Vesicles in Amphibia. Journ., VIII, pp. 189-195, 1893.
- B. The Cleavage of the Amphibian Ovum. (With E. O. Jordan.) Journ. Morph., IX, pp. 407-415, 1894.

- B. The Egg of *Amia* and its Cleavage. (With C. O. Whitman.) Journ. Morph., IX, pp. 309-355, 1894.
- B. The Early Development of *Amblystoma* with Observations on Some Other Vertebrates. Journ. Morph., IX, pp. 346-419, 1894.
- B. The Early Development of the Epiphysis and Paraphysis in *Amia*. (With Benjamin Marshall Davis.) Journ. Comp. Neur., VII, pp. 45-71, 1897.
- B. The Location of the Basis of the Amphibian Embryo. Journ. Morph., XIV, pp. 466-480, 1898.
- B. The Formation of the Embryo of *Necturus*, with Remarks on the Theory of Conrescence. Anat., Anz., XIX, pp. 340-355, 1902.
- FIELDE, ADELE M. Study of an Ant. Proc. Acad. Nat. Sci. of Phila., July, 1901.
- Further Study of an Ant. Proc. Acad. Nat. Sci. of Phila., Oct., 1901.
- Notes on an Ant. Ibid., Sept., 1902.
- Suppl. Notes on an Ant. Ibid., June, 1903.
- Experiments with Ants Induced to Swim. Ibid., Sept., 1903.
- Cause of Feud Between Ants of the Same Species Living in Different Communities. Biol. Bull., V, 1903.
- Artificial Mixed Nests of Ants. Biol. Bull., V, 1903.
- Observations on Ants in Relation to Temperature and to Submergence. Biol. Bull., VII, 1904.
- Portable Ant-Nests. Biol. Bull., VII, 1904.
- Reactions of Ants to Material Vibrations. Proc. Acad. Nat. Sci. of Phila., Sept., 1904.
- Three Odd Incidents in Ant Life. Proc. Acad. Nat. Sci. of Phila., Sept., 1904.
- Power of Recognition Among Ants. Biol. Bull., VII, 1904.
- Tenacity of Life in Ants. Biol. Bull., VII, 1904.
- Observations on the Progeny of Virgin Ants. Biol. Bull., IX, 1905.
- Progressive Odor of Ants. Biol. Bull., X, 1905.
- Temperature as a Factor in the Development of Ants. Biol. Bull., X, 1905.
- The Communal Life of Ants. Nat. Study Rev., I, 1905.
- Suggested Explanations of Certain Phenomena in the Lives of Ants. Biol. Bull., XIII, 1907.
- FIELD, G. W. On the Morphology and Physiology of the Echinoderm Spermatozoön. Journ. Morph., XI, pp. 235-270, 1895.

- FISCHER, MARTIN H. Further Experiments on Artificial Parthenogenesis in Annelids. *Am. Journ. Phys.*, VII, pp. 301-314, 1902.  
How Long Does Arbacia Sperm Live in Sea Water? *Am. Journ. Phys.*, VIII, p. 430, 1903.  
Artificial Parthenogenesis in Nereis. *Am. Journ. Phys.*, IX, p. 160, 1903.
- FLEXNER, SIMON. Infection and Intoxication. *Biol. Lectures*, 1895.  
The Regeneration of the Nervous System of *Planaria torva* and the Anatomy of the Nervous System of Double-headed Forms. *Journ. Morph.*, XIV, pp. 337-346, 1897.
- FOOT, KATHARINE. A. Preliminary Note on the Maturation and Fertilization of the Egg of *Allolobophora*. *Journ. Morph.*, IX, 1894.  
Yolk-Nucleus and Polar Rings. *Journ. Morph.*, XII, 1896.  
The Origin of the Cleavage Centrosomes. *Journ. Morph.*, XII, 1897.  
The Centrosomes of the Fertilized Egg of *Allolobophora foetida*. *Biol. Lec. of Marine Biol. Lab.*, 1898.  
The Cocoons and Eggs of *Allolobophora foetida*. *Journ. Morph.*, XIV, 1898.
- FOOT, KATHARINE, and STROBELL, E. C. Further Notes on the Egg of *Allolobophora foetida*. *Zool. Bull.*, II, 1898.  
Photographs of the Egg of *Allolobophora foetida*. *Journ. Morph.*, XVI, 1900.  
Photographs of the Egg of *Allolobophora foetida*. II. *Journ. Morph.*, XVII, 1901.  
A New Method of Focusing in Photomicrography. *Zeitsch. wiss. Mikr.*, 1901.  
The Spermatozoa of *Allolobophora foetida*. *Am. Journ. Anat.*, I, pp. 321-327, 1902.  
Further Notes on the Cocoons of *Allolobophora foetida*. *Biol. Bull.*, III, 1902.  
The Sperm Centrosome and Aster of *Allolobophora foetida*. *Am. Journ. Anat.*, II, pp. 365-369, 1903.  
Further Notes on a New Method of Focusing in Photomicrography. *Journ. App. Micr. and Lab. Meth.*, V, 1903.  
Prophases and Metaphase of the First Maturation Spindle of *Allolobophora foetida*. *Am. Journ. Anat.*, IV, pp. 199-243, 1905.  
The "Accessory Chromosome" of *Anasa tristis*. *Biol. Bull.*, XII, 1907.

- A Study of Chromosomes in the Spermatogenesis of *Anasa tristis*. *Am. Journ. Anat.*, VII, pp. 279-316, 1907.
- FORD, W. W. On the Presence of Hemolytic Substances in Edible Fungi. *Journ. Infec. Diseases*, IV, 1907.
- GARDINER, E. G. Weismann and Maupas on the Origin of Death. *Biol. Lectures*, Woods Hole, 1890.
- Early Development of *Polychœrus caudatus* Mark. *Journ. Morph.*, XI, pp. 155-171, 1895.
- The Growth of the Ovum, Formation of the Polar Bodies and Fertilization in *Polychœrus caudatus*. *Journ. Morph.*, XV, pp. 73-110, 1898.
- GARREY, W. E. B. The Effects of Ions upon the Aggregation of Flagellated Infusoria. *Am. Journ. Phys.*, III, 1900.
- A Sight Reflex Shown by Sticklebacks. *Biol. Bull.*, VIII, 1905.
- The Osmotic Pressure of Sea Water and of the Blood of Marine Animals. *Biol. Bull.*, VIII, 1905.
- B. Twitchings of Skeletal Muscles Produced by Salt Solutions, etc. *Am. Journ. Phys.*, XIII, 1905.
- GATES, R. R. Pollen Development in Hybrids of *Œnothera lutea* X *O. Lamarckiana*, and its Relation to Mutation. *Bot. Gaz.*, XLIII, pp. 81-115, 1907.
- Hybridization and Germ-Cells of *Œnothera* Mutants. *Bot. Gaz.*, XLIV, pp. 1-21, 1907.
- The Chromosomes of *Œnothera*. *Science*, N. S., XXVII, pp. 193-195, 1908.
- GENTHE, KARL W. Some Notes on *Alcippe lampas* (Hanc) and its Occurrence on the American Atlantic Shore. *Zoöl. Jahrb. Abt. Anat. and Ontog.*, XXI, pp. 181-200, 1904.
- GEROULD, J. H. B. Studies on the Embryology of the Sipunculidæ.
- I. The Embryonal Envelope and its Homologue. *Mark Anniversary Volume*, 1903.
- B. The Development of *Phascolosoma*. Preliminary Note. *Arch. de Zool.*, II, 1904.
- B. The Development of *Phascolosoma* (Studies on the Embryology of the Sipunculidæ II). *Zoöl. Jahrb. Anat.*, XXIII, pp. 77-162, 1906.
- GIES, WILLIAM J. Do Spermatozoa Contain Enzymes Having the Power of Causing Development of Mature Ova? *Am. Journ. Phys.*, VI, p. 53, 1901.
- On the Nature of the Process of Fertilization. *Med. News*, LXXIX, p. 767, 1901.

- GIES, WILLIAM J., and LOEB, JACQUES. Weitere Untersuchungen ueber die entgiftenden Ionenwirkungen und die Rolle der Wertigkeit der Kationen bei diesen Vorgängen. Arch. ges. Phys., XCIII, p. 246, 1902.
- Further Studies of the Toxic and Antitoxic Effects of Ions. Proc. Am. Phys. Soc., Washington, Dec., 1902; Am. Journ. Phys., VIII, 1903.
- GIES, WILLIAM J., and TRUE, RODNEY H. On the Physiological Action of Some of the Heavy Metals in Mixed Solutions. Bull. Torrey Bot. Club, XXX, p. 390, 1903.
- GLASER, O. C. Movement and Problem Saving in *Ophiura Crevispina*. Journ. Exp. Zool., IV, 1907.
- B. The Nematocysts of *Æolis*. Science, XXIII, 1906.
- B. Pathological Amitosis in the Food Ova of *Fasciolaria*. Biol. Bull., XIII, p. 1, 1907.
- B. A Statistical Study of Mitosis and Amitosis in the Endoderm of *Fasciolaria tulipa* var. *distans*. Biol. Bull., XIV, p. 219, 1908.
- GOLDFARB, A. J. Experimental Study of Light as a Factor in the Regeneration of Hydroids. Journ. Exp. Zool., III, 1906.
- Factors in the Regeneration of a Compound Hydroid *Eudendrium ramosum*. Journ. Exp. Zool., IV, pp. 317-349, 1907.
- GORHAM, F. P. The Cleavage of the Egg of *Virbius zostericola* (Smith). Journ. Morph., XI, pp. 741-746, 1895.
- GRAF, ARNOLD. The Sphincter of the Terminal Vesicle of *Hirudo medicinalis*. Journ. Morph., IX, 1894.
- Eine rückgängig gemachte Furchung. Zool. Anz., 462, p. 5, 1894.
- Ueber den Ursprung des Pigments und der Zeichnung bei den Hirudineen. Zool. Anz., XVIII, 1895.
- The Physiology of Excretion. Biol. Lectures, 1896.
- GRAVE, CASWELL. On the Occurrence among Echinoderms of Larvæ with Cilia Arranged in Transverse Rings, with a Suggestion as to their Significance. Biol. Bull., V, pp. 169-186, 1903.
- GREELEY, A. W. Artificial Parthenogenesis in Starfish, Produced by a Lowering of Temperature. Am. Journ. Phys., VI, 1902.
- On the Effect of Variations in the Temperature upon the Process of Artificial Parthenogenesis. Biol. Bull., IV, pp. 129-136, 1903.
- Further Studies on the Effect of Variations in the Temperature on Animal Tissues. Biol. Bull., V, pp. 42-54; 1903.

- GREENE, CHARLES W. The Phosphorescent Organs in the Toadfish, *Porichthys notatus* Girard. Journ. Morph., XV, pp. 667-696, 1899.
- GREGORY, LOUISE H. The Segmental Organ of *Podarke obscura*. Biol. Bull., XIII, pp. 280-287, 1907.
- GUTHRIE, J. E. The Furcula in the Collembola. Proc. Iowa Acad. Sci., XI.
- Studies of the Collembolan Eye. Proc. Iowa Acad. Sci., XIII.
- HALL, R. H. B. The Development of the Mesonephros and the Müllerian Ducts in Amphibia. Bull. Mus. Comp. Zool., XLV, 1904.
- HARGITT, C. W. Recent Experiments on Regeneration. Zoöl. Bull., I, pp. 27-34, 1897.
- Experimental Studies on Hydromedusæ. Biol. Bull., I, pp. 35-51, 1899.
- A Contribution to the Natural History and Development of *Pennaria tiarella* McCr. Am. Nat., XXXIV, pp. 387-414, 1900.
- Variation among Hydromedusæ. Biol. Bull., II, pp. 221-255, 1901.
- B. A Synopsis of the Hydromedusæ, I. Am. Nat., XXXV, p. 301, 1901.
- B. A Synopsis of the Hydromedusæ, II. Am. Nat., XXXV, p. 379, 1901.
- B. A Synopsis of the Hydromedusæ, III. Am. Nat., XXXV, p. 575, 1901.
- B. A Synopsis of the Scyphomedusæ, IV. Am. Nat., XXXVII, p. 331, 1903.
- The Cœlenterate Fauna of Woods Hole. Am. Nat., XXXVI, pp. 549-560, 1902.
- On a Few Medusæ New to Woods Hole. Biol. Bull., IV, pp. 13-23, 1902.
- B. The Early Development of Eudendrium. Zool. Jahrbuch, XX, 1904.
- The Early Development of *Pennaria tiarella* McCr. Arch. Entw'mech., XVIII, pp. 453-488, 1904.
- B. Notes on the Variations of Rhegmatodes. Biol. Bull., IX, p. 368, 1905.
- B. Variations among Scyphomedusæ. Journ. Exp. Zool., II, pp. 547-584, 1905.
- B. The Organization and Early Development of the Egg of *Clava leptostyla*. Biol. Bull., X, 1906.
- B. Experiments on the Behavior of Tubicolous Annelids. Journ. Exp. Zool., III, pp. 295-320, 1906.

- Notes on a Few Cœlenterates of Woods Hole. Biol. Bull., XIV, pp. 95-120, 1908.
- HARGITT, G. T. Notes on the Regeneration of Gonionemus. Biol. Bull., IV, pp. 1-12, 1902.
- Regeneration in Hydromedusæ. Arch. Entw'mech., XVII, pp. 64-91, 1903.
- Budding Tentacles of Gonionemus. Biol. Bull., VI, pp. 241-250, 1904.
- HARRISON, ROSS G. B. Ueber die Histogenese des peripheren Nerven-systems bei *Salmo salar*.
- HARVEY, B. C. H. B. The Chromaffine Characters of Certain Parietal Cells in the Stomach. Brit. Med. Journ., 1906.
- HAZEN, ANNA P. The Development of the Coxal Gland, Branchial Cartilages and Reproductive Duct in *Limulus Polyphemus*. Journ. Morph., XVI, 1900.
- Regeneration in Hydractinia and Podococcyne. Am. Nat., XXXVI, 1902.
- Regeneration in an Œsophagus in the Anemone. Arch. Entw'mech., Vol. XIV, 1902.
- HEGNER, ROBERT W. Observations on the Breeding Habits of Three Chrysomelid Beetles, *Calligrapha bigsbyana*, *C. multipunctata* and *C. lunata*. Psyche, XV, 1908.
- B. The Origin and Early History of the Germ-Cells in Some Chrysomelid Beetles.
- HERRICK, C. J. The Cranial Nerve Components of Teleosts. Anat. Anz., XIII, 1897.
- Report upon a Series of Experiments with the Weigert Methods, with Special Reference for Use in Lower Brain Morphology. N. Y. State Hosp. Bull., Oct., 1897.
- The Cranial Nerves of Bony Fishes. Journ. Comp. Neur., VIII, 1898.
- The Metameric Value of the Sensory Components of the Cranial Nerves. Science, N. S., IX, 1899.
- The Peripheral Nervous System of the Bony Fishes. U. S. Fish. Com. Bull., pp. 315-320, 1899.
- The Cranial and First Spinal Nerves of Menidia: A Contribution upon the Nerve Components of Bony Fishes. Journ. Comp. Neur., IX, 1899; also Arch. Neur. and Psychopathology, II, 1899.
- HOGUE, MARY J. Studies on the Development of the Starfish Egg. Journ. Exp. Zool., IV, 1906.



- HOLMES, S. J. B. The Early Development of Planorbis. Journ. Morph., XVII, pp. 369-458, 1899.
- Phototaxis in the Amphipoda. Am. Journ. Phys., V, pp. 211-234, 1901.
- Observations on the Habits and Natural History of Amphithoe Longimana Smith. Biol. Bull., II, pp. 165-193, 1901.
- Death-Feigning in Terrestrial Amphipods. Biol. Bull., IV, pp. 191-196, 1903.
- B. Sex Recognition among Amphipods. Biol. Bull., V, 1903.
- B. Synopses of North American Invertebrates. XVII, The Amphipods. Am. Nat., XXXVII, 1903.
- B. The Amphipods of Southern New England. Bull. U. S. Fish Com., XXIV, 1905.
- HOUSER, GILBERT L. The Uses of Formaldehyde in Animal Morphology. Report Iowa Acad. Sci., IV, pp. 147-151, 1897.
- The Nerve Cells of the Shark's Brain. Report Iowa Acad. Sci., IV, pp. 151-153, 1897.
- The Neurones and Supporting Elements of the Brain of a Selachian. Journ. Comp. Neur., XI, pp. 65-175, 1901.
- HUMPHREY, J. E. Notes on Technique. Bot. Gaz., XV, 1890.
- A Selection of Plant Types for the General Biology Course. Biol. Lec., Woods Hole, Mass., 1897.
- HUNTER, G. W. Notes on the Finer Structure of the Nervous System of Cynthia partita (Verrill). Zool. Bull., II, pp. 99-115, 1898.
- Notes on the Peripheral Nervous System of Molgula manhattensis. Journ. Comp. Neur., VIII, 1898.
- The Structure of the Heart of Molgula manhattensis (Verrill). Anat. Anz., XXI, 1902.
- Notes on the Heart Action of Molgula manhattensis (Verrill). Am. Journ. Phys., X, 1903.
- HUNTER, S. J. On the Production of Artificial Parthenogenesis in Arbacia by the Use of Sea Water Concentrated by Evaporation. Am. Journ. Phys., VI, pp. 177-180, 1901.
- On the Conditions Governing the Production of Artificial Parthenogenesis in Arbacia. Biol. Bull., V, pp. 143-151, 1903.
- On the Morphology of Artificial Parthenogenesis in the Sea Urchin, Arbacia. Science, XIX, pp. 213-214, 1904.
- HYATT, ALPHEUS. Some Governing Factors usually neglected in Biological Investigations. Biol. Lectures, 1899.
- HYDE, IDA H. The Nervous Mechanism of the Respiratory Movements in Limulus polyphemus. Journ. Morph., IX, pp. 431-448, 1894.

- Localization of the Respiratory Center in the Skate. *Am. Journ. Phys.*, X, pp. 236-258, 1901.
- The Nervous System in *Gonionema Murbachii*. *Biol. Bull.*, IV, pp. 40-45, 1902.
- Differences in Electrical Potential in Developing Eggs. *Am. Journ. Phys.*, XII, p. 241, 1904.
- A Reflex Respiratory Center. *Am. Journ. Phys.*, XVI, pp. 368-377, 1906.
- The Nervous Distribution in the Eye of *Pecten Irradians*. *Mark Anniversary Vol.*
- B. Entwicklungsgeschichte einiger Scyphomedusen. *Zeitschr. wiss. Zool.*, LVIII, 1894.
- B. A Study of the Cardiac, Respiratory and Blood-Pressure Changes in the Skate Following Intravenous Injections of Salt Solutions. *Amer. Journ. Phys.*, Dec., 1908.
- JENNINGS, H. S. B. Behavior of the Lower Organisms. *Columbia Univ. Press*, N. Y., 1906.
- JENNINGS, H. S., and JAMIESON, C. Studies on Reactions to Stimuli in Unicellular Organisms. X, The Movements and Reactions of Pieces of Ciliate Infusoria. *Biol. Bull.*, III, pp. 225-240, 1902.
- JOHNSON, H. P. B. Amitosis in the Embryonal Envelopes of the Scorpion. *Bull. Mus. Comp. Zool.*, XXI, pp. 127-161, 1892.
- B. A Contribution to the Morphology and Biology of the Stentors. *Journ. Morph.*, VIII, pp. 467-562, 1893.
- B. The Polychæta of the Puget Sound Region. *Proc. Boston Soc. Nat. Hist.*, XXIX., pp. 381-437, 1901.
- B. Collateral Budding in Annelids of the Genus *Trypanosyllis*. *Am. Nat.*, XXXIV, pp. 295-315, 1902.
- JOHNSTON, J. B. B. The Brain of *Petromyzon*. *Journ. Comp. Neur.*, XII, 1902.
- JONES, LYND. A Contribution to the Life History of the Common (*Sterna hirundo*) and Roseate (*S. dougalli*) Terns. *The Wilson Bulletin*, XVIII, pp. 35-47, 1906.
- B. The Development of Nestling Feathers. *Lab. Bull.*, XIII, Oberlin College, 1907.
- JORDAN, E. O. B. The Habits and Development of the Newt. *Journ. Morph.*, VIII, p. 270, 1893.
- KEARNEY, T. H. B. Are Plants of Sea Beaches and Dunes True Halophytes? *Bot. Gaz.*, XXXVII, p. 424, 1904.
- KELLCOTT, W. E. B. The Development of the Vascular System of *Ceratodus*. *Anat. Anz.*, XXVI, 1905.

- B. The Development of the Vascular and Respiratory Systems of *Ceratodus*. N. Y. Acad. Sci., Mem. II., 1905.
- KING, HELEN D. Regeneration in *Asterias vulgaris*. Arch. Entw'mech., VII, pp. 351-363, 1898.
- Further Studies on Regeneration in *Asterias vulgaris*. Arch. Entw'mech., IX, 1900.
- Notes on Regeneration in *Tubularia crocea*. Biol. Bull., VI, 1904.
- The Effects of Compression on the Maturation and Early Development of the Eggs of *Asterias Forbesii*. Arch. Entw'mech., XXI, 1906.
- KINGSLEY, J. S. The Ontogeny of *Limulus*. Preliminary. Amer. Nat., 1890.
- The Embryology of *Limulus*. Journ. Morph., VII, 1892.
- The Marine Biological Laboratory. Pop. Sci. Monthly, Sept., 1892.
- Segmentation of the Head. Biol. Lec., Woods Hole, Mass., 1895.
- KNOWER, H. McE. The Embryology of a Termite. Journ. Morph., XVI, 1900.
- KOCH, W. B. The Relation of Electrolytes to Lecithin and Kephalin. Journ. Biol. Chem., III, p. 53, 1907.
- KRAEMER, HENRY. Some Notes on *Chondrus*. Am. Journ. Pharm., LXX, p. 479, 1899.
- Origin and Nature of Color in Plants. Proc. Am. Phil. Soc., XLIII, p. 257, 1904.
- Diluted Sulphuric Acid as a Fungicide. Proc. Am. Phil. Soc., XLV, p. 157, 1906.
- Studies on Color in Plants. Bull. Tor. Bot. Club, XXXIII, p. 77, 1906.
- B. Note on the Origin of Tannin in Galls. Bot. Gaz., XXX, p. 275, 1900.
- B. Crystals in *Datura Stramonium*. Bull. Tor. Bot. Club, XXVII, p. 37, 1900.
- B. Crystalline and Crystalloidal Substances and their Relation to Plant Structure. Proc. Acad. Nat. Sci., Phila., LIII, p. 450, 1903.
- B. The Position of *Pleurococcus* and Mosses on Trees. Bot. Gaz., XXXII, p. 422, 1901.
- B. The Continuity of Protoplasm. Proc. Am. Phil. Soc., XLI, p. 174.
- B. The Structure of the Starch Grain. Bot. Gaz., XXXIV, p. 341, 1902.

- B. Pith Cells of *Phytolacca decandra*. A. A. A. S., 1902, p. 483; *Torrey*, II, p. 141, 1902.
- B. The Structure of the Corn Grain and its Relation to Popping. *Science*, XVII, p. 408.
- B. Some Notes on the Bending of the Inflorescence of *Daucus Carota*. *Science*, XVII, p. 464, 1903.
- B. Further Observations on the Starch Grain. *Bot. Gaz.*, XL, p. 305, 1905.
- B. The Oligodynamic Action of Copper Foil on Certain Intestinal Organisms. *Proc. Am. Phil. Soc.*, XLIX, p. 51, 1905.
- B. The Efficiency of Copper Foil in Destroying Typhoid and Colon Bacilli in Water. *Am. Med.*, IX, p. 275, 1905.
- B. The Use of Metallic Copper in the Purification of Drinking Water. *Am. Journ. Pharm.*, LXXVIII, p. 140, 1905.
- LANGDON, FANNIE E. The Sense Organs of *Nereis virens*, Sars. *Journ. Comp. Neur.*, X, pp. 1-78, 1900.
- LANGENBECK, CLARA. Formation of the Germ-Layers in the Amphipod *Microduetopus Gryllotalpa* Costa. *Journ. Morph.*, XIV, pp. 301-336, 1897.
- LEE, F. S. Ueber den Gleichgewichtssinn. *Centrbl. Phys.*, VI, p. 508, 1892.
- A Study of the Sense of Equilibrium in Fishes. Part I, *Journ. Phys.*, XV, p. 311, 1893. Part II, *ibid.*, XVII, p. 192, 1894.
- Functions of the Ear and Lateral Line in Fishes. *Am. Journ. Phys.*, I, p. 128, 1898.
- The Scope of Modern Physiology. *Amer. Nat.*, XXVIII, 1894.
- Action of Ethyl-Alcohol on Contractile Protoplasm. *Am. Journ. Phys.*, VIII, 1903.
- LEFEVRE, GEORGE. Budding in *Perophora*. *Journ. Morph.*, XIV, 1898.
- B. Artificial Parthenogenesis in *Thalassema mellita*. *Science*, XXI, 1905.
- B. Further Observations on Artificial Parthenogenesis. *Science*, XXIII, 1906.
- B. Artificial Parthenogenesis in *Thalassema mellita*. *Journ. Exp. Zool.*, IV, 1907.
- LEFEVRE, GEORGE, and MCGILL, CAROLINE. The Chromosomes of *Anasa tristis* and *Anax junius*. *Am. Journ. Anat.*, VII, 1908.
- LEWIS, MARGARET. Studies on the Central and Peripheral Nervous Systems of Two Polychæte Annelids. *Proc. Am. Acad. Arts and Sci.*, XXIII, pp. 225-267, 1898.

- LEWIS, WARREN H. *B.* Experiments on the Origin and Differentiation of the Optic Vesicle in Amphibia. *Am. Journ. Anat.*, VII, 1907.
- B.* Lens-Formation from Strange Ectoderm in *Rana sylvatica*. *Am. Journ. Anat.*, VII, 1907.
- B.* Transplantation of the Lips of the Blastopore in *Rana palustris*. *Am. Journ. Anat.*, VII, 1907.
- B.* Experimental Evidence in Support of the Theory of Outgrowth of the Axis Cylinder. *Am. Journ. Anat.*, VII, 1907.
- B.* Experimental Studies on the Development of the Eye in Amphibia. III. On the Origin and Differentiation of the Lens. *Am. Journ. Anat.*, VII, 1907.
- B.* On the Origin and Differentiation of the Optic Vesicle in Amphibian Embryos. *Anat. Record*, VI, 1907.
- LEWIS, WARREN H., and LOEB, J. On the Prolongation of the Life of Unfertilized Eggs of the Sea-Urchin by Potassium Cyanide. *Am. Journ. Phys.*, VI, 1902.
- LIBBEY, WM. The Study of Ocean Temperatures and Currents. *Biol. Lec.*, Woods Hole, Mass., 1890.
- LIFE, A. C. Vegetative Structure of *Mesogloia*. Report Missouri Bot. Gardens, XVI, p. 157, 1905.
- LILLIE, FRANK R. Preliminary Account of the Embryology of *Unio Complanata*. *Journ. Morph.*, VIII, pp. 569-578, 1893.
- The Embryology of *Unionidæ*. *Journ. Morph.*, X, pp. 1-100, 1895.
- Centrosome and Sphere in the Egg of *Unio*. *Zool. Bull.*, I, pp. 265-274, 1898.
- Adaptation in Cleavage. *Biol. Lec.*, Woods Hole, Mass., 1898.
- The Organization of the Egg of *Unio*, Based on a Study of its Maturation, Fertilization and Cleavage. *Journ. Morph.*, XVII, pp. 227-292, 1900.
- Notes on Regeneration and Regulation in *Planaria*. I. Source of Material of New Parts and Limits of Size. *Am. Nat.*, XXXIV, pp. 173-177, 1900.
- Differentiation without Cleavage in the Egg of the Annelid *Chætopterus pergamentaceus*. *Arch. Entw'mech.*, XIV, pp. 477-499, 1902.
- On the Nature and Behavior of the Morphogenetic Substances in the Egg of *Chætopterus*. *Science*, XXI, p. 335, 1906.
- Observations and Experiments Concerning the Elementary Phenomena of Development in *Chætopterus*. *Journ. Exp. Zool.*, III, pp. 153-268, 1906.

- LILLIE, RALPH S. On Differences in the Effects of Various Salt Solutions on Ciliary and on Muscular Movements in *Arenicola Larvæ*. I. *Am. Journ. Phys.*, V, pp. 56-85, 1901.
- On the Effects of Various Salt Solutions on Ciliary and Muscular Movement in the Larvæ of *Arenicola* and *Polygordius*. II. *Am. Journ. Phys.*, VII, pp. 25-55, 1902.
- The Relation of Ions to Ciliary Movement. *Am. Journ. Phys.*, X, pp. 419-443, 1903.
- Fusion of Blastomeres and Nuclear Division without Cell-division in Solutions of Non-Electrolytes. *Biol. Bull.*, IV, pp. 164-178, 1903.
- The Physiology of Cell-division. I. Experiments on the Conditions Determining the Distribution of Chromatic Matter in Mitosis. *Am. Journ. Phys.*, XV, pp. 46-84, 1905.
- On the Conditions Determining the Disposition of the Chromatic Filaments and Chromosomes in Mitosis. *Biol. Bull.*, VIII, pp. 193-204, 1905.
- The Structure and Development of the Nephridia of *Arenicola Cristata* Stimpson. *Mitth. aus der Zool. Station zu Neapel*, XVII, pp. 341-405, 1905.
- The Relation between Contractility and Coagulation of the Colloids in the Ctenophore Swimming Plate. *Am. Journ. Phys.*, XVI, pp. 117-128, 1906.
- The Relation of Ions to Contractile Processes. I. The Action of Salt Solutions on the Ciliated Epithelium of *Mytilus edulis*. *Am. Journ. Phys.*, XVII, pp. 89-141, 1906.
- The Relation of Ions to Contractile Processes. II. The Rôle of Calcium Salts in the Mechanical Inhibition of the Ctenophore Swimming Plate. *Am. Journ. Phys.*, XXI, pp. 200-220, 1908.
- Momentary Elevation of Temperature as a Means of Producing Artificial Parthenogenesis in Starfish Eggs and the Conditions of its Action. *Journ. Exp. Zool.*, V, pp. 375-428, 1908.
- LINGLE, D. J. On the Reversal of the Direction of the Contraction of the Heart in Ascidians.
- Locy, W. A. The Formation of the Medullary Groove in Elasmobranchs. *Journ. Morph.*, 1893.
- The Derivation of the Pineal Eye. *Anat. Anz.*, 1894.
- The Optic Vesicles of Elasmobranchs and their Serial Relation to Other Structures on the Cephalic Plate. *Journ. Morph.*, 1894.

- Metameric Segmentation in Medullary Folds and Embryonic Rim. *Anat. Anz.*, IX, 1894.
- Nachtrag. *Anat. Anz.*, 1894.
- The Mid-Brain and the Accessory Optic Vesicles. *Anat. Anz.*, 1894.
- Contribution to the Structure and Development of the Vertebrate Head. *Journ. Morph.*, 1896.
- The Primary Segmentation of the Vertebrate Head. *Biol. Lec.*, 1895.
- B. Accessory Optic Vesicles in the Chick Embryo. *Anat. Anz.*, 1897.
- New Facts Regarding the Development of the Olfactory Nerve. *Anat. Anz.*, 1899.
- A New Cranial Nerve in Selachians. *Mark Anniv. Vol.*, 1903.
- On a Newly Recognized Nerve Connected with the Fore-Brain of Selachians. *Anat. Anz.*, 1905.
- LOEB, JACQUES. Experiments on Cleavage. *Journ. Morph.*, VII, 1892.
- Investigations in Physiological Morphology. *Journ. Morph.*, VII, 1892.
- A Contribution to the Physiology of Coloration. *Journ. Morph.*, VIII, 1893.
- Ueber die Entwicklung von Fischembryonen ohne Kreislauf. *Pflueger's Arch.*, 1893.
- On Some Facts and Principles of Physiological Morphology. *Biol. Lectures*, 1893.
- Ueber kuenstliche Umwandlung positiv heliotropischer Thiere in negativ heliotropische und umgekehrt. *Pflueger's Arch.*, LIV, 1894.
- Ueber eine einfache Methode zwei oder, Mehr Embryonen aus einem Ei hervorzubringen. *Pflueger's Arch.*, 1894.
- Ueber die relative Empfindlichkeit von Fischembryonen gegen Sauerstoffmangel und Wasserentziehung. *Pflueger's Arch.*, 1894.
- Beiträge zur Gehirnphysiologie der Würmer. *Pflueger's Arch.*, LVI, 1894.
- On the Limits of the Divisibility of Living Matter. *Biol. Lectures*, 1894.
- Ueber die Entstehung der Activitätshypertrophie der Muskeln. *Pflueger's Arch.*, LVI, 1894.
- On the Influence of Light on the Periodic Depth Migrations of Pelagic Animals. *Report of U. S. Fish Com.*, 1894.

- Ueber die Grenzen der Theilbarkeit der Eissubstanz. Pflueger's Arch., LIX, 1894.
- Zur Physiologie und Psychologie der Actinien. Pflueger's Arch., LIX, 1895.
- Ueber die Localization der Athmung in der Zelle. (With Irving Hardesty.) Pflueger's Arch., LXI, 1895.
- Untersuchungen ueber die physiologischen Wirkungen des Sauerstoffmangels. Pflueger's Arch., LXII, 1895.
- Ueber den Einfluss des Lichts auf die Organbildung bei Theiren. Pflueger's Arch., LXIII, 1896.
- Bemerkungen ueber Regeneration. Arch. Entw'mech., II, 1896.
- Ueber Kerntheilung ohne Zelltheilung. Arch. Entw'mech., II, 1896.
- Beiträge zur Entwicklungsmechanik der aus einem Ei hervorgehenden Doppelbildungen. Arch. Entw'mech., II, 1896.
- Zur Theorie des Galvanotropismus. In collaboration with S. S. Maxwell. Pflueger's Arch., LXIII, 1896.
- Zur Theorie des physiologischen Licht und Schwerkrafwirkungen. Pflueger's Arch., LXVI, 1897.
- The Heredity of the Marking in Fish Embryos. Biol. Lectures, Woods Hole, 1898.
- Biological Problems of To-day: Physiology. Science, VII, 1898.
- Ueber den Einfluss von Alkalien und Säuren auf die embryonale Entwicklung und das Wachstum. Arch. Entw'mech., VII, 1898.
- Ueber die physiologische Wirkung von Alkalien und Säuren in starker Verdünnung. Pflueger's Arch., LXXIII, 1898.
- Ueber die angebliche gegenseitige Beeinflussung der Furchungszellen und die Entstehung der Blastula. Arch. Entw'mech., VIII, 1899.
- On the Nature and Process of Fertilization and the Production of Normal Larvæ (Plutei) from the Unfertilized Eggs of the Sea Urchin. Am. Journ. Physiol., III, 1899.
- Ueber die Aehnlichkeit der Flussigkeitsresorption in Muskeln und Seifen. Pflueger's Arch., LXXV, 1899.
- Ueber Ionen welche rhythmische Zuckungen der Skelettmuskeln hervorrufen. Festschr. Prof. Fick, Braunschweig, 1899.
- Warum ist Regeneration kernloser Protoplasmastücke unmöglich oder erschwert? Arch. Entw'mech., VIII, 1899.
- On Ion-Proteid Compounds and their Rôle in the Mechanics of Life Phenomena. I. The Poisonous Character of a Pure NaCl-Solution. Am. Journ. Phys., III, 1900.



- On the Different Effects of Ions upon Myogenic and Neurogenic Rhythmical Contractions and upon Embryonic and Muscular Tissue. *Am. Journ. Phys.*, III, 1900.
- The Artificial Production of Normal Larvæ from the Unfertilized Eggs of the Sea Urchin (*Arbacia*). *Am. Journ. Phys.*, III, 1900.
- On Artificial Parthenogenesis in Sea Urchins. *Science*, N. S., XI, 1900.
- On the Transformation and Regeneration of Organs. *Am. Journ. Phys.*, IV, 1900.
- Further Experiments on Artificial Parthenogenesis, and the Nature of the Process of Fertilization. *Am. Journ. Phys.*, IV, 1900.
- Artificial Parthenogenesis in Annelids. *Science*, N. S., XII, 1900.
- Ueber die Bedeutung der Ca und K-Ione für die Herzthätigkeit. *Pflueger's Arch.*, LXXX, 1900.
- Comparative Physiology of the Brain and Comparative Psychology. G. P. Putnam's Sons, New York, 1900.
- Experiments on Artificial Parthenogenesis in Annelids (*Chætopterus*) and the Nature of the Process of Fertilization. *Am. Journ. Phys.*, IV, 1901.
- Ueber den Einfluss der Wertigkeit und möglicher Weise der elektrischen Ladung von Ionen auf ihre antitoxische Wirkung. *Pflueger's Arch.*, LXXXVIII, 1901.
- Weitere Versuche ueber künstliche Parthenogenese. In collaboration with Hugh Neilson. *Pflueger's Arch.*, LXXXVII, 1901.
- On the Prolongation of the Life of the Unfertilized Eggs of the Sea Urchins by Potassium Cyanide. *Am. Journ. Phys.*, VI, 1902.
- Studies on the Physiological Effects of the Valency and Possibly of the Electrical Charges of Ions. I. The Toxic and Antitoxic Effects of Ions as a Function of their Valency and Possibly of their Electrical Charge. *Am. Journ. Phys.*, VI, 1902.
- Ueber Methoden und Fehlerquellen der Versuche ueber künstliche Parthenogenese. *Arch. Entw'mech.*, XIII, 1902.
- On the Production and Suppression of Muscular Twitchings and Hypersensitiveness of the Skin by Electrolytes. Univ. of Chicago, Decennial Publications, 1902.
- B. The Dynamics of Living Matter. The Macmillan Co., New York, 1906.

- B. Studies in General Physiology. Two Vols. University of Chicago Press, 1905.*
- B. Untersuchungen ueber künstliche Parthenogenese und das Wesen des Befruchtungsvorgangs. Johann Ambrosius Barth, Leipzig, 1906.*
- B. Ueber den chemischen Character des Befruchtungsvorgangs, und seine Bedeutung für die Theorie der Lebensersoheinungen. Leipzig, 1908.*
- LOEB, LEO. *On the Blood Lymph Cells and Inflammatory Processes of Limulus. Journ. Med. Research., VII, 1902.*
- On the Coagulation of the Blood of Some Arthropods and on the Influence of Pressure and Traction on the Protoplasm of the Blood Cells of Arthropods. Biol. Bull., IV, 1903.*
- Ueber die Bedeutung der Blutkörperchen für die Blutgerinnung und der Entziehung einiger Arthropoden. Virchow's Arch., CLXXIII, 1903.*
- On the Specificity of Tissue Coagulins, Especially of Invertebrates. Univ. of Pa. Med. Bull., Jan., 1904.*
- On the Spontaneous Agglutination of Blood Cells of Arthropods. Univ. of Pa. Med. Bull., Feb., 1904.*
- Ueber d. Koagulation d. Blutes einiger Arthropoda. Hofmeister's Beiträge, V, 1904.*
- The Coagulation of the Blood. Medical News, April, 1905.*
- Studies on Cell Granula and Amœboid Movements of the Blood Cells of Limulus. Univ. of Pa. Med. Bull., May, 1905.*
- Immunity and Adaptation. Biol. Bull., IX, 1905.*
- Untersuchungen ueber Blutgerinnung. Hofmeister's Beiträge, VIII, 1906.*
- Vergleichende Untersuchungen ueber d. Thrombose. Virchow's Archiv., CLXXXV, 1906.*
- Untersuchungen ueber d. Granula d. Amœbocyten. Folia hæmatol., IV, Jahrg., 1907.*
- Untersuchungen ueber Blutgerinnung. Hofmeister's Beiträge, IX, 1907.*
- Einige neuere Arbeiten ueber d. Blutgerinnung bei Wirbellosen und bei Wirbelthieren. Biochem. Centralb., VI, 1907.*
- Ueber den Einfluss des Lichtes auf die Färbung und die Entwicklung von Eiern von Asterias in Loesungen verschiedener Farbstoffe. Arch. Entw'mech., XXIII, 1907.*
- Ueber d. Ersetzbarkeit d. Calciums durch andere Kationen bei der Gerinnung d. Hummerblutes. Centralblatt. Phys., XX 1907.*

- The Effect of Light on Cells in Fluorescent Solutions After Addition of KCN. (With Miss Elizabeth Cooke.) *Proc. Soc. Exp. Biol. and Med.*, 1908.
- LYMAN, GEORGE R. Culture Studies on the Polymorphism of Hymenomyces. *Proc. Boston Soc. Nat. Hist.*, XXXIII, pp. 125-209, 1907.
- LYON, E. P. The Functions of the Otocyst. *Journ. Comp. Neur.*, VIII, p. 238, 1898.
- Contributions to the Comparative Physiology of Compensatory Motions. *Am. Journ. Phys.*, III, p. 86, 1899.
- Compensatory Motions in Fishes. *Am. Journ. Phys.*, IV, p. 77, 1900.
- Effects of KCN and Lack of Oxygen on the Fertilized Eggs and Embryos of the Sea Urchin (*Arbacia*). *Am. Journ. Phys.*, VII, p. 56, 1902.
- Rhythms of Susceptibility and of CO<sub>2</sub> Production in Cleavage. *Biol. Bull.*, VI, p. 323, 1904.
- Rhythms of CO<sub>2</sub> Production During Cleavage. *Science*, N. S., XIX, p. 350, 1904.
- A Biological Examination of Distilled Water. *Biol. Bull.*, VI, p. 198, 1904.
- Rhythms of Susceptibility and of Carbon Dioxide Production in Cleavage. *Am. Journ. Phys.*, XI, p. 52, 1904.
- On Rheotropism. I. Rheotropism in Fishes. *Am. Journ. Phys.*, XII, p. 149, 1904.
- Rheotropism in Fishes. *Biol. Bull.*, VIII, p. 238, 1905.
- Theory of Geotropism in *Paramœcium*. *Am. Journ. Phys.*, XIV, p. 421, 1905.
- Note on the Geotropism of *Arbacia* Larvæ. *Biol. Bull.*, XII, p. 21, 1906.
- Note on the Heliotropism of *Palæmonetes* Larvæ. *Biol. Bull.*, XII, p. 23, 1906.
- Some Results of Centrifugalizing the Eggs of *Arbacia* (Preliminary). *Am. Journ. Phys.*, XV, 1906.
- Results of Centrifugalizing Eggs. *Arch. Entw'mech.*, XXIII, p. 151, 1907.
- The Relation of the Substances of the Egg, Separated by a Strong Centrifugal Force, to the Location of the Embryo. (With T. H. Morgan.) *Arch. Entw'mech.*, XXIV, p. 147, 1907.
- MCCLENDON, J. F. On the Anatomy and Embryology of the Central Nervous System of the Scorpion. *Biol. Bull.*, VIII, pp. 38-55, 1904.

- On the Development of the Parasitic Copepods. Biol. Bull., XII, pp. 37-88, 1907.
- McCLUNG, C. E. B. The Chromosome Complex of Orthopteran Spermatocytes. Biol. Bull., V, pp. 304-440, 1905.
- MACDOUGAL, D. T. Significance of Mycorrhizas. Biol. Lectures, 1899.
- Influence of Inversions of Temperature, Ascending and Descending Currents of Air, upon Distribution. Biol. Lectures, 1899.
- MACFARLANE, J. M. Irrito-Contractility in Plants. Biol. Lectures, 1893.
- The Organization of Botanical Museums for Schools, Colleges and Universities. Biol. Lectures, 1894.
- McMURRICH, J. P. Cell Division and Development. Biol. Lectures, 1890.
- Contributions on the Morphology of the Actinozoa. II. On the Development of the Hexactiniae. Journ. Morph., IV, pp. 303-330, 1891.
- The Development of *Cyanea Arctica*. Am. Nat., 1891.
- Contributions on the Morphology of the Actinozoa. III. The Phylogeny of the Actinozoa. Journ. Morph., V, pp. 125-164, 1891.
- The Gastraea Theory and its Successors. Biol. Lectures, 1891.
- The Formation of the Germ-Layers in the Isopod Crustacea. Zool. Anz., XV, 1892.
- The Segmentation of the Ovum in Terrestrial Isopods. Zool. Anz., XVIII, 1895.
- Embryology of the Isopod Crustacea. Journ. Morph., XI, pp. 63-154, 1895.
- Cell Division and Development. Biol. Lectures, 1895.
- B. A Text Book of Invertebrate Morphology. New York, 2d edition, 1896.
- The Yolk-Lobe and the Centrosome of *Fulgur curica*. Anat. Anz., XII, pp. 534-539, 1896.
- The Epithelium of the so-called Midgut of the Terrestrial Isopods. Journ. Morph., XIV, pp. 83-108, 1897.
- Is the Isopod "Midgut" Digestive in Function? Zool. Anz., XXII, pp. 67-70, 1899.
- MARK, E. L. *Polychærus caudatus*, nov. gen. et nov. spec. Festschrift zum siebenzigsten Geburtstage Rudolf Leuckarts, Leipzig, 1892.
- MATHEWS, A. P. Some Ways of Causing Mitotic Division in Unfertilized *Arbacia* Eggs. Am. Journ. Phys., IV, p. 343, 1900.

- Artificial Parthenogenesis Produced by Mechanical Agitation. Am. Journ. Phys., VI, p. 142, 1901.
- The Action of Pilocarpine and Atropine on the Embryos of the Star-Fish and the Sea Urchin. Am. Journ. Phys., VI, p. 207, 1901.
- The So-called Cross-Fertilization of *Asterias* by *Arbacia*. Am. Journ. Phys., VI, p. 216, 1901.
- Electrical Polarity in Hydroids. Am. Journ. Phys., VIII, p. 294, 1903.
- The Relation Between Solution Tension, Atomic Volume and the Physiological Action of Elements. Am. Journ. Phys., X, p. 290, 1903.
- The Nature of Chemical and Electrical Stimulation. I. The Physiological Action of an Ion Depends upon its Electrical State and its Electrical Stability. Am. Journ. Phys., XI, p. 455, 1904.
- The Toxic and Anti-toxic Action of Salts. Am. Journ. Phys., XII, p. 419, 1904.
- A Contribution to the General Principles of the Pharmacodynamics of Salts and Drugs. Biol. Studies of Pupils of Wm. T. Sedgwick, p. 81, 1906.
- A Note on the Structure of the Living Protoplasm of Echinoderm Eggs. Biol. Bull., XI, pp. 141-145, 1906.
- A Note on the Susceptibility of Segmenting *Arbacia* and *Asterias* Eggs to Cyanides. Biol. Bull., XI, pp. 137-140, 1906.
- An Apparent Pharmacological "Action at a Distance" by Metals and Metalloids. Am. Journ. Phys., XVIII, p. 39, 1907.
- The Cause of the Pharmacological Action of Ammonium Salts. Am. Journ. Phys., XVIII, p. 58, 1907.
- A Contribution to the Chemistry of Cell-Division, Maturation and Fertilization. Am. Journ. Phys., XVIII, p. 89, 1907.
- MATHEWS, A. P., and WHITCHER, B. R. The Importance of Mechanical Shock in Protoplasmic Activities. Am. Journ. Phys., VIII, 1903.
- MAXWELL, S. S. Zur Theorie des Galvanotropismus. (With Jacques Loeb.) Pflueger's Archiv., LXVII, 1897.
- Beiträge zur Gehirnphysiologie der Anneliden. Pflueger's Arch., LXVII, p. 263, 1897.
- MEAD, A. D. Preliminary Account of the Cell-Lineage of Amphitrite and the Annelids. Journ. Morph., IX, pp. 465-473, 1894.

- Some Observations on Maturation and Fecundation in Chætop-  
terus pergamentaceous Cuvier. Journ. Morph., X, 1895.
- The Origin of the Egg Centrosomes. Journ. Morph., XII, pp.  
391-394, 1896.
- The Rate of Cell-Division and Function of the Centrosome. Biol.  
Sec., Woods Hole, 1897.
- The Cell Origin of the Prototroch. Biol. Lectures, 1898.
- The Early Development of Marine Annelids. Journ. Morph.,  
XIII, pp. 227-326, 1897.
- The Origin and Behavior of the Centrosomes in the Annelid  
Egg. Journ. Morph., XIV, pp. 181-218, 1898.
- MEEK, W. J. The Relative Resistance of the Heart Ganglia, the  
Intrinsic Nerve Plexus and the Heart to the Action of Drugs.  
Am. Journ. Phys., XXI, 1908.
- MELANDER, A. L. New Species of Hygroceleuthus and Dolichopus.  
(With C. T. Brues.) Biol. Bull., I, pp. 123-148, 1900.
- A Decade of Dolichopodidæ. Journ. Entomol., XXXII, pp. 134-  
144, 1900.
- New Species of Hymenoptera. (With C. T. Brues.) Biol. Bull.,  
III, pp. 33-42, 1902.
- Monograph of Empididæ of North America. Trans. Am. Ent.  
Soc., XXVIII, pp. 195-367, 1902.
- Guests and Parasites of the Burrowing Bee Halictus. (With C.  
T. Brues.) Biol. Bull., V, pp. 1-27, 1903.
- Notes on North American Mutillidæ. Trans. Am. Ent. Soc.,  
XXIX, pp. 291-330, 1903.
- An Interesting New Chrysotus. Entomol. News, pp. 72-75, 1903.
- MELTZER, S. J. Some Observations on the Effects of Agitation upon  
Arbacia Eggs. Am. Journ. Phys., IX, p. 245, 1903.
- MENSCH, P. CALVIN. Stolonization in Autolytus varians. Journ.  
Morph., XVI, pp. 269-322, 1899.
- On the Variation in the Position of the Stolon in Autolytus.  
Biol. Bull., I, pp. 89-93, 1900.
- MERRILL, HARRIET BELL. Note on the Eye of the Leech. Zool. Anz.,  
XVII, 1894.
- METCALF, M. M. Preliminary Notes on the Embryology of Chiton.  
Johns Hopkins Univ. Circ., June, 1893.
- Contributions to the Embryology of Chiton. Studies from Biol.  
Lab. of Johns Hopkins Univ., 1893.
- Notes on Tunicate Morphology. I. The "Sub-neural Gland in  
Ascidians." Anat. Anz., XI, 1895.

- Notes on Tunicate Morphology. II. On the Presence of Pharyngeal and Cloacal Glands in *Cynthia* (*Halocynthia*) *partita*. III. On Some Points in the Anatomy of the Nervous System of *Boltenia bolteni*. IV. On the Nervous Nature of Certain Lateral Outgrowths from the Ganglion in *Salpa cordiformis*, chain form; and on the Smaller Eyes in *Salpidæ*. V. On the Precocious Development of the Testis and the Absence of Eleoblast in Young Chain Individuals of *Salpa cylindrica*. *Anat. Anz.*, XI, 1895.
- The Neural Gland in *Ascidia atra*. *Zool. Bull.*, I, 1897.
- The Neural Gland in *Cynthia papillæ*. *Anat. Anz.*, XIV, 1898.
- Some Relations between Nervous Tissue and Glandular Tissue in the Tunicata. *Biol. Bull.*, I, 1899.
- Notes on the Morphology of the Tunicata. *Zoöl. Jahrb.*, XIII, 1900.
- Phagocytosis in a Mammalian Ovary. *Biol. Bull.*, II, 1901.
- Neretina virginea*, var. *minor*. *Amer. Nat.*, XXXVIII, 1904.
- The Anatomy of the Eyes and Neural Glands in the Aggregated Forms of *Cyclosalpa dolichosoma virgula* and *Salpa punctata*. (With M. E. L. Johnson.) *Biol. Bull.*, IX, 1905.
- Salpa* and the Phylogeny of the Eyes of Vertebrates. *Anat. Anz.*, XXIX, 1906.
- B. An Outline of the Theory of Organic Evolution. The Macmillan Co., 2d edition, 1906.
- MONTGOMERY, T. H. B. The Derivation of the Freshwater and Land Nemerteans and Allied Questions. *Journ. Morph.*, XI, 1895.
- On the Connective Tissues and Body Cavities of the Nemerteans, with Notes on Classification. *Zool. Jahrb.*, X, 1897.
- Descriptions of New Nemerteans, with Notes on Other Species. *Zool. Jahrb.*, X, 1897.
- Studies on the Elements of the Central Nervous System of the Heteronemertines. *Journ. Morph.*, XIII, 1897.
- Cytological Studies, with Especial Regard to the Morphology of the Nucleolus. *Journ. Morph.*, XV, 1899.
- Observations on Various Nucleolar Structures of the Cell. *Biol. Lectures*, 1899.
- B. The Spermatogenesis of *Peripatus Balfouri* up to the Formation of the Spermatid. *Zool. Jahrb.*, XIV, 1900.
- A Study of the Chromosomes of the Germ Cells of Metazoa. *Trans. Amer. Phil. Soc.*, XX, 1901.

- Further Studies on the Chromosomes of the Hemiptera heteroptera. *Proc. Acad. Nat. Sci., Philadelphia*, 1901.
- List of the Hemiptera heteroptera of the Vicinity of Woods Hole, Mass. *Entom. News*, 1902.
- B. The Adult Organization of *Paragordius varius* (Leidy). *Zool. Jahrb.*, XVIII, 1903.
- Supplementary Notes on Spiders of the Genera *Lycosa*, *Pardosa*, *Pirata* and *Dolomedes* from the Northeastern United States. *Proc. Acad. Nat. Sci., Philadelphia*, 1903.
- Descriptions of North American Araneæ of the Families *Lycosidæ* and *Pisauridæ*. *Proc. Acad. Nat. Sci., Philadelphia*, 1904.
- Chromosomes in the Spermatogenesis of the Hemiptera heteroptera. *Trans. Amer. Phil. Soc.*, XXI, 1906.
- The Oviposition, Cocooning and Hatching of an Aranead, *Theridium tepidariorum* C. Koch. *Biol. Bull.*, XII, 1906.
- Probable Dimorphism of the Eggs of an Aranead. *Biol. Bull.*, XII, 1907.
- On the Maturation Mitoses and Fertilization of the Egg of *Theridium*. *Zool. Jahrb.*, XXV, 1907.
- B. On Reproduction, Animal Life Cycles and the Biological Unit. *Trans. Texas Acad. Sci.*, IX, 1907.
- MOORE, ANNE. *Dinophilus Gardineri* (Sp. Nov.). *Biol. Bull.*, I, pp. 15-18, 1899.
- MOORE, A. C. The Mitoses in the Spore Mother-Cell of *Palavicinia*. *Bot. Gaz.*, XXXVI, p. 384, 1903.
- Sporogenesis in *Pallavicinia*. *Bot. Gaz.*, XL, p. 81, 1905.
- MOORE, G. T. New or Little Known Unicellular Algæ. I. *Chlorocystes Cohnii*. *Bot. Gaz.*, XXX, pp. 100-113, 1900.
- New or Little Known Unicellular Algæ. II. *Eremosphæra viridis* and *Excentrosphæra*. *Bot. Gaz.*, XXXII, pp. 309-325, 1901.
- MOORE, J. P. Descriptions of Two Species of Polychæta from Woods Hole, Mass. *Proc. Acad. Nat. Sci., Philadelphia*, 1903.
- Some Pelagic Polychæta New to the Woods Hole Fauna. *Proc. Acad. Nat. Sci., Philadelphia*, 1903.
- A New Species of Sea Mouse (*Aphrodita nastata*) from Eastern Massachusetts. *Proc. Acad. Nat. Sci., Philadelphia*, 1905.
- Some Marine Oligochæta of New England. *Proc. Acad. Nat. Sci., Philadelphia*, 1905.
- Descriptions of New Species of Polychæta from the Southwestern Coast of Massachusetts. *Proc. Acad. Nat. Sci., Philadelphia*, 1906.



Descriptions of New Spioniform Annelids. Proc. Acad. Nat. Sci., Philadelphia, 1907.

MORGAN, LILLIAN V. Regeneration of Grafted Pieces of Planarians. Journ. Exp. Zool., III, pp. 269-294, 1906.

MORGAN, T. H. The Relationships of the Sea Spiders. Biol. Lectures, 1892.

A Contribution to the Ontogeny and Phylogeny of the Pycnogonids. Johns Hopkins Studies, V, 1891.

The Test Cells of the Ascidians. Journ. Morph., V, 1892.

Spiral Modification of Metamerism. Journ. Morph., VII, 1892.

Balanoglossus and Tornaria of New England. Zool. Anz., 1892.

Experimental Studies on Echinoderm Eggs. Anat. Anz., 1893.

The Development of Balanoglossus. Journ. Morph., IX, 1894.

The Growth and Metamorphosis of Tornaria. Journ. Morph., V, pp. 407-458, 1891.

Experimental Studies on Teleost Eggs. Anat. Anz., VIII, pp. 803-814, 1893.

The Formation of the Fish Embryo. Journ. Morph., X, pp. 419-472, 1895.

Regeneration and Liability to Injury. Zool. Bull., I, pp. 287-300, 1898.

Regeneration in Gonionomus. Am. Nat., XXXIII, pp. 939-957, 1899.

The Action of Salt-Solutions on the Unfertilized and Fertilized Eggs of Arbacia and Other Animals. Roux's Arch., VIII, p. 448, 1899.

Further Experiments on the Regeneration of the Appendages of the Hermit Crab. Anat. Anz., XVII, pp. 1-9, 1900.

Regeneration in Planarians. Arch. Entw'mech., X, pp. 58-119, 1900.

Regeneration in Teleosts. Arch. Entw'mech., X, pp. 120-134, 1900.

Further Studies on the Action of Salt-Solutions and of Other Agents on the Eggs of Arbacia. Roux's Arch., X, p. 489, 1900.

Further Experiments on the Regeneration of the Tail of Fishes. Arch. Entw'mech., XIV, pp. 539-561, 1902.

The Reflexes Connected with Autotomy in the Hermit Crab. Am. Journ. Phys., VI, p. 278, 1902.

Control of Heteromorphosis in Planaria maculata. Roux's Arch., XVII, p. 683, 1903.

Self-Fertilization Induced by Artificial Means. Journ. Exp. Zool., I, pp. 135-178, 1904.

- Some Further Experiments on Self-Fertilization in *Ciona*. Biol. Bull., VIII, pp. 313-330, 1905.
- The Physiology of Regeneration. Journ. Exper. Zool., III, pp. 457-500, 1906.
- Hydranth Formation and Polarity in Tubularia. Journ. Exper. Zool., III, pp. 501-516, 1906.
- The Male and Female Phylloxerans of the Hickories. Biol. Bull., X, pp. 201-206, 1906.
- Some Further Records Concerning the Physiology of Regeneration in Tubularia. Biol. Bull., XIV, pp. 149-162, 1908.
- The Effect of Centrifuging Eggs of the Mollusc *Cumingia*. Science, XXVII, pp. 66-67, 1908.
- MORGAN, T. H., and LYON, E. P. The Relation of the Substances of the Egg, Separated by a Strong Centrifugal Force, to the Location of the Embryo. Arch. Entw'mech., XXIV, pp. 147-159, 1907.
- MORGAN, T. H., and SCHIEDT, A. E. Regeneration in the Planarian *Phagocata gracilis*. Biol. Bull., VII, pp. 160-165, 1904.
- MORRILL, A. D. The Pectoral Appendages of *Prionotus* and their Innervation. Journ. Morph., XI, 1895.
- The Innervation of the Auditory Epithelium of *Mustelus Canis*. Journ. Morph., XIV, 1897.
- MORSE, MAX. Notes on the Behavior of *Gonionemus*. Journ. Comp. Neur., XVI, pp. 450-456, 1906.
- Further Notes on the Behavior of *Gonionemus*. Am. Nat., XLI, pp. 683-688, 1907.
- MUNSON, J. P. The Ovarian Egg of *Limulus*: A Contribution to the Problem of the Centrosome and Yolk-nucleus. Journ. Morph., XV, pp. 111-220, 1898.
- MURBACH, LOUIS. Preliminary Note on the Life History of *Gonionemus*. Journ. Morph., XI, pp. 493-496, 1895.
- Hydroids from Woods Hole, Mass.; *Hypolytus peregrinus*, a New Unattached Marine Hydroid; *Corynitis Agassiz* and its Medusa. Quar. Journ. Micr. Sci., XLII, pp. 341-360, 1899.
- The Static Function in *Gonionemus*. Am. Journ. Phys., X, pp. 201-209, 1903.
- On the Light Receptive Function of the Marginal Papillæ of *Gonionemus*. Biol. Bull., XIV, 1907.
- MURLIN, J. R. Absorption and Secretion in the Digestive System of the Land Isopods. Proc. Phila. Acad. Nat. Sci., May, 1902.
- NEAL, H. V. The Segmentation of the Nervous System in *Squalus*

- acanthias. Bull. Mus. Comp. Zool., Harvard University, XXXI, 1897.
- The Problem of the Vertebrate Head. Journ. Comp. Neur., VIII, 1898.
- The Histogenesis of Central Nerves. I. Spinal Ventral Nerves. Mark Anniv. Volume, 1903.
- NELSON, J. A. B. The Early Development of *Dinophilus* as Compared with that of the Annelids. Amer. Nat., XXXVIII, 1904.
- B. The Early Development of *Dinophilus*: A Study in Cell-Lineage. Proc. Acad. Nat. Sci., Phila., LVI, 1904.
- B. The Nervous System and Nephridia of *Dinophilus*. Science, N. S., XXIV.
- B. The Morphology of *Dinophilus Conklini* n. sp. Proc. Acad. Nat. Sci., Phila., LIX, 1907.
- NEWMAN, H. H. On Some Factors Governing the Permeability of the Egg Membrane by the Sperm. Biol. Bull., IX, pp. 378-387, 1905.
- B. The Significance of Scute and Plate Abnormalities in *Cheilonia*. Biol. Bull., X, 1906.
- On the Respiration of the Heart, with Special Reference to the Heart of *Limulus*. Amer. Journ. Phys., XV, pp. 371-386, 1906.
- B. The Spawning Habits of Certain Tortoises. Journ. Comp. Neur. and Psychol., XVI, 1906.
- Spawning Behavior and Sexual Dimorphism in *Fundulus heteroclitus* and Allied Fish. Biol. Bull., XII, pp. 314-348, 1907.
- The Process of Heredity as Exhibited by the Development of *Fundulus* Hybrids. Journ. Exp. Zool., 1908.
- NICHOLS, LOUISE M. The Spermatogenesis of *Oniscus asellus*, Linn, with Special Reference to the History of the Chromatin. Amer. Nat., XXXV, 1901.
- Chromosome Relations in the Spermatocytes of *Oniscus*. Biol. Bull., XII, 1906.
- NOGUCHI, HIDEYO. The Interaction of the Blood of Cold-Blooded Animals, with Reference to Hæmolysis, Agglutination and Precipitation. Univ. Penna. Med. Bull., Nov., 1902.
- A Study of Immunization Hæmolysins, Agglutinins, Precipitins and Coagulins in Cold-Blooded Animals. Univ. of Penna. Med. Bull., Nov., 1902.
- NOGUCHI, HIDEYO, and FLEXNER, SIMON. On the Plurality of Cytolysins in Snake Venom. Univ. of Penna. Med. Bull., July-August, 1903.

- NOGUCHI, HIDEYO. The Multiplicity of the Hæmagglutinins, and the Heat Liability of the Complements of Cold-Blooded Animals. Univ. of Penna. Med. Bull., July-August, 1903.  
The Action of Snake Venom upon Cold-Blooded Animals. Carnegie Inst., 1904.
- NORMAN, W. W. Segmentation of the Nucleus without Segmentation of the Protoplasm. Roux's Arch., III, 1896.  
Dürfen wir aus den Reactionen Niederer Thiere auf das Vorhandensein von Schmerzempfindungen Schliessen. Pflueger's Arch., LXVII, p. 137, 1897.  
Do Reactions against Injury Indicate Pain Sensations? Am. Journ. Phys., III, p. 271, 1900.
- OSBORN, H. F. Evolution and Heredity. Biol. Lectures, 1890.  
Search for the Unknown Factors of Evolution. Biol. Lectures, 1894.  
A Student's Reminiscences of Huxley. Biol. Lectures, 1895.
- OSTERHOUT, W. W. A. On the Life History of *Rhabdonia tenera*. Ann. Bot., X, p. 403, 1896.
- OSTERHOUT, W. W., and SETCHELL, W. A. Some Aqueous Media for Preserving Algæ for Class Material. Bot. Gaz., XXI, p. 140, 1896.
- PACKARD, W. H. On Resistance to Lack of Oxygen and on a Method of Increasing this Resistance. Am. Journ. Phys., XV, pp. 30-41, 1905.  
The Effect of Carbohydrates on Resistance to Lack of Oxygen. Am. Journ. Phys., XVIII, pp. 164-180, 1907.  
Further Studies on Resistance to Lack of Oxygen. Amer. Journ. Phys., April, 1908.
- PATTEN, WM. On the Origin of Vertebrates from Arachnids. Quar. Journ. Micr. Sci., XXXI, 1890.  
On Structures Resembling Dermal Bones in *Limulus*. Anat. Anz., IX, 1893.  
The Structure and Origin of the Excretory Organs of *Limulus*. Zool. Bull., I, 1898.  
The Endocrania of *Limulus*, *Apus* and *Mygale*. Journ. Morph., XVI, 1899.
- PATTEN, WM. The Development of the Coxal Gland, Branchial Cartilages and Genital Ducts of *Limulus polyphemus*. Journ. Morph., XVI, 1899.
- PATTEN, WM., and REDENBAUGH, W. A. The Nervous System of *Limulus polyphemus* with Observations on the General Anatomy. Journ. Morph., XVI, 1899.

- PATTEN, WM. and HAZEN, ANNA P. *B.* The Morphology of the Arthropod-Vertebrate Phylum.
- PATTERSON, J. T. *B.* The Order of Appearance of the Anterior Somites in the Chick. *Biol. Bull.*, XIII, 1907.
- PEABODY, J. E. The Ampullæ of Lorenzini of the Selachii. *Zool. Bull.*, I, pp. 163-178, 1897.
- PEARL, RAYMOND. On the Behavior and Reactions of *Limulus* in Early Stages of its Development. *Journ. Comp. Neur. and Psychol.*, XIV, pp. 138-164, 1904.
- PEEBLES, FLORENCE. Experiments in Regeneration and in Grafting of Hydrozoa. *Arch. Entw'mech.*, X, pp. 435-488, 1900.
- B.* Further Experiments in Regeneration and in Grafting of Hydroids. *Arch. Entw'mech.*, XIV, 1902.
- PENHALLOW, D. P. A Classification of the North American Taxaceæ and Coniferæ on the Basis of Stem Structure. *Biol. Lectures*, 1897.
- PERKINS, H. F. Degeneration Phenomena in the Larvæ of *Gonionema*. *Biol. Bull.*, III, 1902.
- Budding in the Larvæ of *Gonionema Murbachii*. *Johns Hopkins Univ. Circ.*, XXI, 1902.
- The Development of *Gonionema Murbachii*. *Proc. Phila. Acad. Nat. Sci.*, LIV, 1903.
- PLATT, JULIA B. The Anterior Head Cavities of *Acanthias*. *Zoöl. Anz.*, 1890.
- The Anterior Head Cavities of *Acanthias*. *Zool. Anz.*, 1890.
- Further Contributions to the Morphology of the Vertebrate Head. *Anat. Anz.*, VI, 1891.
- A Contribution to the Morphology of the Vertebrate Head Based on a Study of *Acanthias vulgaris*. *Journ. Morph.*, V, 1891.
- RANKIN, W. M. *B.* The Northrop Collection of Crustacea from the Bahamas. *Ann. N. Y. Acad. Sci.*, XI, 1898.
- RETZER, ROBERT. Results of Recent Investigations on the Mammalian Heart. *Anat. Soc.*, Dec., 1907.
- Some Anatomical Facts and Theories Concerning the Heart. *Johns Hopkins Med. Soc.*, March, 1908.
- RHODES, FREDERICK A. Carbohydrate Metabolism: Relation of the Different Tissues to the Destruction of Sugar. *Amer. Med.*, VIII, 1904.
- RICE, EDWARD L. *B.* Fusion of Filaments in the Lamellibranch Gill. *Biol. Bull.*, II, 1900.
- Gill Development in *Mytilus*. *Biol. Bull.*, XIV, 1908.

- RICHARDSON, HARRIET. *B.* Contributions to the Natural History of the Isopoda. Proc. U. S. Nat. Mus., XXVII, 1904.
- B.* A Monograph on the Isopods of North America. Bull. U. S. Nat. Mus., LIV, 1905.
- RUEDIGER, G. F. The Effect of Streptococci on Sera of Cold-Blooded Animals. Journ. Inf. Dis., I, 1904.
- Phagocytosis and Opsonins in the Lower Animals. (With D. J. Davis.) Journ. Inf. Dis., IV., 1907.
- RUSSELL, H. L. Bacteriological Investigations of the Sea and its Floor. Bot. Gaz., XVII, p. 312, 1892.
- RYDER, JOHN A. Dynamics in Evolution. Biol. Lectures, II, 1893.
- A Dynamical Hypothesis of Inheritance. Biol. Lectures, III, 1894.
- SCHIVELY, MARY A. Ueber die Abhängigkeit der Herzthätigkeit einiger Seethiere von der Concentration des Seewassers. Pfluger's Arch., Aug., 1894.
- The Anatomy and Development of *Spirorbis borealis*. Proc. Phila. Acad. Nat. Sci., 1897.
- SCOTT, J. W. Periods of Susceptibility in the Differentiation of Unfertilized Eggs of *Amphitrite*. Biol. Bull., V, pp. 35-41, 1903.
- Morphology of the Parthenogenetic Development of *Amphitrite*. Journ. Exp. Zool., III, pp. 49-98, 1906.
- SCOTT, W. B. Paleontology as a Morphological Discipline. Biol. Lectures, 1895.
- Methods of Paleontological Inquiry. Biol. Lectures, 1896.
- SHAW, C. W. Cleistogamy in *Polygala polygama* and *P. pauciflora*. Contr. Bot. Lab. Univ. of Penna., II, p. 122, 1901.
- The Development of Vegetation in the Morainal Depressions of the Vicinity of Woods Hole. Bot. Gaz., XXXIII, p. 437, 1902.
- B.* Note on the Sexual Generation and the Development of the Seed Coats in Certain of the *Papaveraceæ*. Bull. Torr. Bot. Club, XXXI, p. 429, 1904.
- SIMONS, ETOILE B. Development of Conceptacles in *Sargassum Fillipendrium*. Bot. Gaz., XLI, 1906.
- SMALLWOOD, W. M. Contribution to the Morphology of *Pennaria tiarella*, McCrady. Am. Nat., 1899.
- Centrosome in the Maturation and Fertilization of *Bulla solitaria*. Biol. Bull., III, 1901.
- Maturation, Fertilization and Early Cleavage of *Hamiura solitaria*. Bull. Mus. Comp. Zool., 1904.
- Natural History of *Hamiura solitaria*. Am. Nat., 1904.

- SOLLMAN, TORALD. The Simultaneous Action of Pilocarpine and Atropine on the Developing Embryos of the Sea Urchin and Starfish. *Am. Journ. Phys.*, X, p. 352, 1904.
- Structural Changes of Ova in Anisotonic Solutions and Saponin. *Am. Journ. Phys.*, XII, p. 99, 1904.
- The Effects of a Series of Poisons on Adult and Embryonic Funduli. *Am. Journ. Phys.*, XVI, p. 1, 1906.
- SPAULDING, E. G. An Establishment of Association in Hermit Crabs, *Eupagurus Longicarpus*. *Journ. Comp. Neur.*, XIV, pp. 49-61, 1904.
- B. The Special Physics of Segmentation as Shown by the Synthesis, from the Standpoint of Universally Valid Dynamic Principles, of all the Artificial Parthenogenetic Methods. *Biol. Bull.*, VI, pp. 97-122, 1904.
- The Rhythm of Immunity and Susceptibility of Fertilized Sea-Urchin Eggs to Ether, to HCl, and to Some Salts. *Biol. Bull.*, VI, pp. 224-240, 1904.
- B. The Energy of Segmentation: An Application of Physical Laws to Organic Events. *Journ. Exp. Zool.*, IV, pp. 283-316, 1907.
- STERNBERG, G. M. Immunity. *Biol. Lectures*, 1895.
- STEVENS, NETTIE M. B. Notes on Regeneration in *Planaria lugubris*. *Arch. Entw'mech.*, XV, 1902.
- B. Regeneration in *Tubularia mesembryanthemum*. *Arch. Entw'mech.*, XV, 1902.
- Further Studies on the Ciliate Infusoria, *Licnophora* and *Boveria*. *Arch. Prot.*, 1903.
- Further Studies on the Ovogenesis of *Sagitta*. *Zool. Jahrb.*, XXII, 1905.
- Studies on the Germ Cells of Aphids. *Carnegie Inst.*, Pub. LI, 1906.
- Studies in Spermatogenesis. II. A Comparative Study of the Heterochromosomes in Certain Species of Coleoptera, Hemiptera, and Lepidoptera, with Special Reference to Sex Determination. *Carnegie Inst.*, Pub. XXXVI, 1906.
- STOCKARD, C. R. The Development of *Fundulus heteroclitus* in Solutions of Lithium Chloride with Appendix on its Development in Fresh Water. *Journ. Exp. Zool.*, III, pp. 99-120, 1906.
- The Artificial Production of a Single Median Cyclopean Eye in the Fish Embryo by Means of Sea Water Solution of Magnesium Chloride. *Arch. Entw'mech.*, XXIII, pp. 249-258, 1907.

- The Influence of External Factors, Chemical and Physical, on the Development of *Fundulus heteroclitus*. Journ. Exp. Zool., IV, pp. 165-202, 1907.
- STREETER, G. L. On the Histogenesis of Spinal Ganglia in Mammals. Proc. Assoc. Am. Anat., Am. Journ. Anat., IV, 1904.
- Some Experiments on the Developing Ear Vesicle of the Tadpole, with Relation to Equilibration. Journ. Exp. Zool., III, 1906.
- Some Controlling Influences in the Development of the Amphibian Ear Vesicle. Proc. Seventh Internat. Zool. Congress, Boston, 1907.
- STRONG, O. S. B. The Cranial Nerves of Amphibia. Journ. Morph., X, pp. 101-230, 1895.
- Cranial Nerves of *Squalus acanthias*. Science, 1903.
- STRONG, R. M. A Case of Abnormal Plumage. Biol. Bull., III, pp. 289-294, 1902.
- B. Causes of Blue and Green in Feathers. Biol. Bull., VIII, pp. 237-38, 1905.
- B. The Evolution of Color-Producing Structures in Birds. Science, XXI, 1905.
- SUMNER, F. B. Kupffer's Vesicle and its Relation to Gastrulation and Concrescence. Mem. N. Y. Acad. Sci., II, pp. 47-84, 1900.
- SURFACE, F. M. The Early Development of a Polyclad, *Planocera inquilina* Eh. Proc. Phila. Acad. Nat. Sci., Dec., 1907.
- TENNENT, D. H., and HOGUE, MARY J. Studies on the Development of the Starfish Egg. Journ. Exp. Zool., III, pp. 517-542, 1906.
- TENNENT, D. H. B. A Study of the Life History of *Bucephalus haimaneus*, A Parasite of the Oyster. Quar. Journ. Micr. Sci., XLIX, 1906.
- Further Studies on the Parthenogenetic Development of the Starfish Egg. Biol. Bull., XIII, pp. 309-316, 1907.
- TERRY, O. P. Galvanotropism of *Volvox*. Am. Journ. Phys., XV, p. 235, 1906.
- THACHER, H. F. The Regeneration of the Pharynx in *Planaria maculata*. Am. Nat., XXXVI, pp. 633-641, 1902.
- A Preliminary Note on the Absorption of the Hydranths of Hydroid Polyps. Biol. Bull., IV, pp. 86-98, 1903.
- Absorption of the Hydranth in Hydroid Polyps. Biol. Bull., V, pp. 297-303, 1903.
- THOMPSON, CAROLINE B. Preliminary Description of *Zygewpolia litoralis*, a New Genus and New Species of Heteronemertean. Zool. Anz., XXIII, 1890.



- Carinoma tremaphoros, a New Mesonemertean Species. Zool. Anz., XXIII, 1890.
- Zygewpolia litoralis, a New Heteronemertean. Proc. Phila. Acad. Nat. Sci., 1901.
- The Commissures and the Neurochord Cells of the Brain of Cerebratulus lacteus.
- THORNDIKE, E. L. Instinct. Biol. Lectures, 1899.
- The Associative Processes in Animals. Biol. Lectures, 1899.
- The Intelligence of Fishes. Am. Nat.
- TINGLE, J. BISHOP. B. On Dimroth's paper: Behavior of Diazonium Compounds towards Ketonic and Enolic Desmotrophy. Journ. Am. Chem. Soc., Aug., 1907.
- TINGLE, J. BISHOP, and LOVELACE, B. F. B. Intramolecular Condensation of Perthanilic Acid and of Certain Allied Compounds. II. Am. Chem. Journ., Nov., 1907.
- TINGLE, J. BISHOP, and WILLIAMS, L. F. B. Study of the Action of Certain Anions on Camphor-oxalic Acid. Am. Chem. Journ., Jan., 1908.
- B. Study of the Action of Primary and Tertiary Anions on Camphor-oxalic Acid. Am. Chem. Journ., Feb., 1908.
- TINGLE, J. BISHOP, and GORSHIRE, E. E. B. Investigation of the Claisen Condensation. II. Effect of the Reaction of Varying Conditions. III. Contribution towards the Elucidation of the Mechanism of the Reaction. IV. Contribution towards the Elucidation of the Mechanism of the Reaction. Am. Chem. Journ., June, 1908.
- TORRELL, ELLEN. On the Fertilization of the Eggs of Asterias and Arbacia by Sperm Immersed in Solutions of Alcohol, Ether, Ammonium hydroxide, or Ammonium chloride. Bull. Wisc. Nat. Hist. Soc., V.
- TREADWELL, A. L. The Cell-Lineage of Podarke obscura. Preliminary Communication. Zool. Bull., I, pp. 195-203, 1897.
- Equal and Unequal Cleavage in Annelids. Biol. Lectures, 1898.
- The Cytogeny of Podarke obscura Verrill. Journ. Morph., XVII, pp. 399-486, 1901.
- Notes on the Nature of "Artificial Parthenogenesis" in the Egg of Podarke obscura. Biol. Bull., III, pp. 235-240, 1902.
- TRUE, RODNEY H., and GIES, WM. J. On the Physiological Action of Some of the Heavy Metals in Mixed Solutions. Bull. Torrey Bot. Club, XXX, pp. 390-402, 1903.

- TRUE, RODNEY H., and OGLEVEE, C. S. The Effect of the Presence of Insoluble Substances on the Toxic Action of Poisons. *Bot. Gaz.*, XXXIX, pp. 1-21, 1905.
- VAN DUYN, J. Ueber Heteromorphose bei Planarien. *Pfluger's Arch.*, LXIV, p. 569, 1896.
- WALLACE, LOUISE B. The Structure and Development of the Axillary Gland of *Batrachus*. *Journ. Morph.*, VIII, 1893.
- The Germ-Ring in the Egg of the Toadfish (*Batrachus tau*). *Journ. Morph.*, XV, 1898.
- The Accessory Chromosome in the Spider. *Anat. Anz.*, XVIII, 1900.
- Spermatogenesis of the Spider. *Biol. Bull.*, VIII, 1905.
- WATASÉ, S. Homology of the Centrosome. *Journ. Morph.*, VIII, 1893.
- Studies on the Cephalopods. I. Cleavage of the Ovum. *Journ. Morph.*, IV, 1891.
- On Karyokinesis. *Biol. Lectures*, I, 1890.
- The Origin of the Sertoli's Cell. *Amer. Nat.*, 1892.
- On the Significance of Spermatogenesis. *Amer. Nat.*, 1892.
- On the Phenomena of Sex Differentiation. *Journ. Morph.*, VI, 1892.
- On the Nature of Cell Organization. *Biol. Lectures*, II, 1892.
- Origin of the Centrosome. *Biol. Lectures*, III, 1894.
- Luminous Phenomena of Living Organisms. *Biol. Lectures*, 1895.
- WEBBER, HERBERT J. On the Antheridia of Lomentaria. *Ann. Bot.*, V, 1891.
- WHEELER, W. M. B. Neuroblasts in the Arthropod Embryo. *Journ. Morph.*, IV, 1891.
- B. Concerning the "Blood-tissue" of the Insecta. *Psyche*, 1892.
- B. A Contribution to Insect Embryology. *Journ. Morph.*, VIII, 1893.
- B. The Primitive Number of Malpighian Vessels in Insects. *Psyche*, 1893.
- Syncelidium pellucidum*, a New Marine Triclad. *Journ. Morph.*, IV, 1894.
- Planocera inquilina*, a Polyclad Inhabiting the Gill-chamber of *Sycotypus canaliculatus*. *Journ. Morph.*, IX, 1894.
- The Problems, Methods and Scope of Developmental Mechanics. Translation from Wm. Roux. *Biol. Lectures*, 1894.
- The Behavior of the Centrosomes in the Fertilized Egg of *Myzostoma Glabrum*, Leuckart. *Journ. Morph.*, X, 1895.

- B. New Species of Dolichopodidæ from the United States. Proc. Calif. Acad. Sci., (3) Zool. II, 1899.
- B. Caspar Frederick Wolff and the Theoria Generationis. Biol. Lec., Marine Biol. Lab., 1899.
- B. On the Genus Hypocharassus Mik. Entom. News, Apr., 1900.
- B. The Habits of Ponera and Stigmatomma. Biol. Bull., II, 1900.
- WHITMAN, C. O. The Inadequacy of the Cell Theory of Development. Journ. Morph., VIII, pp. 639-658, 1893.
- Specialization and Organization. Biol. Lectures, I, 1890.
- The Naturalist's Occupation. Biol. Lectures, I, 1890.
- A Marine Observatory. Pop. Sci. Monthly, 1893.
- The Work and Aims of the Marine Biological Laboratory. Biol. Lectures, II, 1893.
- The Metamerism of Clepsine. Festschrift zum siebenzigsten Geburtstag Rudolf Leuckarts. Leipzig, 1892.
- A Sketch of the Structure and Development of the Eye of Clepsine. Spengel's Zool. Jahrb., VI, 1893.
- Evolution and Epigenesis. Biol. Lectures, III, 1894.
- Bonnet's Theory of Evolution. Biol. Lectures, III, 1894.
- The Palingenesia and Germ-Doctrine of Bonnet. Biol. Lectures, 1894.
- Animals' Behavior. Biol. Lectures, 1898.
- A Biological Farm. Biol. Bull., III, 1902.
- WHITNEY, D. D. An Examination of the Effects of Mechanical Shocks and Vibration upon the Rate of Development of Fertilized Eggs. Journ. Exp. Zool., III, pp. 41-48, 1906.
- WILCOX, ALICE W. Locomotion in Young Colonies of Pectinatella magnifica. Biol. Bull., XI, 1906.
- WILLCOX, MARY A. Biology of Acmæa Testudinalis Müller. Am. Nat., XXXIV, 1905.
- Anatomy of Acmæa Testudinalis Müller. Am. Nat., XL, 1906.
- WILDER, BURT G. Some Neural Terms. Biol. Lectures, 1896.
- WILLEY, ARTHUR. B. Amphioxus and the Ancestry of the Vertebrates. With Preface by H. F. Osborn. Col. Univ., Biol. Ser. II, Macmillan Co., 1894.
- On the Protostigmata of Molgula manhattensis (De Kay). Quar. Journ. Micr. Sci., XLIV, pp. 141-160, 1900.
- WILSON, E. B. Some Problems of Annelid Morphology. Biol. Lectures, I, 1890.

- The Origin of the Germ-bands of Annelids. Journ. Morph., IV, 1891.
- The Cell-Lineage of Nereis. Journ. Morph., VI, 1892.
- Mosaic Theory of Development. Biol. Lectures, 1893.
- The Embryological Criterion of Homology. Biol. Lectures, III, 1894.
- Maturation, Fertilization and Polarity in the Echinoderm Egg. (With A. P. Mathews.) Journ. Morph., XI, 1895.
- Archiplasm, Centrosome and Chromatin in the Sea-Urchin Egg. Journ. Morph., XI, 1895.
- Considerations on Cell-Lineage and Ancestral Reminiscence. Ann. N. Y. Acad. Sci., XI.
- The Structure of Protoplasm. Biol. Lectures, 1898.
- On Protoplasmic Structure in the Eggs of Echinoderms, etc. Journ. Morph., Suppl. XV, 1899.
- Studies on Chromosomes, II. Journ. Exp. Zool., II, 1905.
- Studies on Chromosomes, III. Journ. Exp. Zool., III, 1906.
- B. The Cell in Development and Inheritance.* 2d ed., 1900.
- B. Experiments on Cleavage and Localization in the Nemertine Egg.* Arch. Entw'mech., XVI.
- WILSON, W. P. The Influence of External Conditions on Plant Life. Biol. Lectures, II, 1893.
- WOLFE, J. J. Cytological Studies in Nemalion. Ann. Bot., XVIII, p. 607, 1904.
- WOODRUFF, L. L. *B. An Experimental Study on the Life History of Hypotrichous Infusoria.* Journ. Exp. Zool., 1905.
- B. Physiological and Morphological Changes during 860 Generations of Oxytricha fallax.* Science, 1905.
- B. Variation during the Life Cycle of Infusoria in its Bearings on the Determination of Species.* Science, 1907.
- B. Effects of Alcohol on the Division-rate of Infusoria.* Science, 1908.
- B. Effects of Alcohol on the Life Cycle of Infusoria.* Biol. Bull., XV, 1908.
- B. Increased Susceptibility of Protozoa to Poison Due to Treatment with Alcohol.* Proc. Soc. Exp. Biol. and Med., V, 1908.
- YAMANOUCHI, SHIGEO. The Life History of Polysiphonia violacea. Bot. Gaz., XLI, pp. 425-433, 1906.
- The Life History of Polysiphonia. Bot. Gaz., XLII, pp. 401-449, 1906.

- YERKES, ADA W. Modifiability of Behavior in *Hydroides dianthus*.  
Journ. Comp. Neur. and Psychol., XVI, pp. 441-449, 1906.
- YERKES, ROBERT M. Formation of Habits in the Turtle. Pop. Sci.  
Monthly, LVIII, pp. 519-525, 1901.
- Habit Formation in the Green Crab, *Carcinus granulatus*. Biol.  
Bull., III, pp. 241-244, 1902.
- A Contribution to the Physiology of the Nervous System of the  
Medusa *Gonionemus Murbachii*. II. The Physiology of the  
Central Nervous System. Am. Journ. Phys., VII, pp. 181-  
198, 1902.
- A Study of the Reactions and the Reaction Time of the Medusa  
*Gonionemus Murbachii* to Photic Stimuli. Am. Journ. Phys.,  
IX, pp. 278-307, 1903.
- B. Bahnung und Hemmung der Reactionen auf tactile Reize  
durch akustische Reize beim Frosche. Arch. ges. Phys., CVII,  
pp. 207-237, 1905.
- Concerning the Behavior of *Gonionemus*. Journ. Comp. Neur.  
and Psychol., XVI, pp. 457-463, 1906.
- B. The Dancing Mouse: A Study in Animal Behavior. The  
Macmillan Co., 1907.
- ZELENY, CHARLES. A Case of Compensatory Regulation in the Re-  
generation of *Hydroides dianthus*. Arch. Entw'mech., XIII,  
1902.
- B. Compensatory Regulation. Journ. Exp. Zool., II, 1904.
- B. The Relation of the Degree of Injury to the Rate of Regen-  
eration. Journ. Exp. Zool., II, 1905.